

# Appendix I: Acronyms and Terms

*(also see Dictionary of Geological Terms)*

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| <b>Achondrite</b>                   | Stony meteorite, lacking chondules. Igneous origin. Relatively rare.  |
| <b>ANSMET</b>                       | Antarctic Search for Meteorites, funded by U. S. National Science Foundation; led by William Cassidy and Ralph Harvey.              |
| <b>AMN</b>                          | Antarctic Meteorite Newsletter (issued by JSC, SN2)   |
| <b>ARES</b>                         | Astromaterials Research and Exploration Science at the Johnson Space Center   |
| <b>“blue ice”</b>                   | Locations in Antarctic where samples were recovered (appendix IV)   |
| <b>ALHA</b>                         | Allan Hills   |
| <b>EETA</b>                         | Elephant Moraine  |
| <b>LEW</b>                          | Lewis Cliffs  |
| <b>QUE</b>                          | Queen Alexander Range   |
| <b>Yamato</b>                       | Yamato mountains  |
| <b>GRV</b>                          | Grove mountains   |
| <b>BM(NH)</b>                       | British Museum of Natural History, now The Natural History Museum, London.  |
| <b>Cosmogenic Isotopes</b>          | Isotopes produced by interaction of high-energy cosmic-rays with elements in sample.  |
| <b>DaG</b>                          | Dar al Gani, Libya  |
| <b>deflation</b>                    | wind erosion area   |
| <b>Dho</b>                          | Dhofar, Oman  |
| <b>DML</b>                          | Dark mottled lithology of Zagami meteorite.   |
| <b>DN</b>                           | Olivine-rich lithology of Zagami, obtained from David New.  |
| <b>druse</b>                        | A crust or coating of small crystals in a crack or void (see Martinez and Gooding, 1986 for a description of “white-druse”).        |
| <b>dpm</b>                          | disintegrations per minute  |
| <b>Educational Thin Section Set</b> | JSC, BM(NH) and NIPR all have sets of thin sections of meteorites, with educational pamphlets, for use by educational institutions. |
| <b>EMP</b>                          | electron microprobe analysis  |
| <b>ejection age</b>                 | the sum of the exposure age and terrestrial age, the time since the sample was ejected from Mars                                    |

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| <b>exposure age</b>       | The time interval a small body (~1m) spends in space as measured by radionuclides generated by high energy cosmic rays.   |
| <b>fusion crust</b>       | thin glass coating found on outer surface of meteorite due to heating by atmospheric entry  |
| <b>genealogy diagram</b>  | Diagram that shows the relationship of rock splitting and allocations. The number before the comma is called the generic sample and the number after the comma is the “daughter” split. |
| <b>HED</b>                | Howardite, Eucrite, Diogenite. Large group of apparently related achondrites.   |
| <b>g</b>                  | gram (also kg = kilogram and mg = miligram etc.)  |
| <b>Ga</b>                 | 1,000,000,000 years   |
| <b>GPa</b>                | Giga Pascals (unit of pressure)   |
| <b>IDMS</b>               | isotope dilution mass spectroscopy  |
| <b>INAA</b>               | instrumental neutron activation analysis  |
| <b>isochron</b>           | A constant-time line on a diagram that compares ratios of radioactive isotopes to their stable daughter isotopes.   |
| <b>interstitial</b>       | Area between the other major mineral phases.  |
| <b>JSC</b>                | Lyndon B. Johnson Space Center, Houston, Texas 77058  |
| <b>Katabatic wind</b>     | The wind that blows off of the Antarctic continent.   |
| <b>lherzolite</b>         | Two pyroxene rock, plutonic.  |
| <b>Ma</b>                 | 1,000,000 years   |
| <b>Martian meteorite</b>  | A meteorite from Mars, a SNC meteorite.   |
| <b>MWG</b>                | Meteorite Working Group. U. S. advisory panel to ANSMET/NASA/Smithsonian  |
| <b>magmatic inclusion</b> | small recrystallized glass inclusions usually found in early-formed olivine or chromite crystals (presumably trapped magmatic liquid)   |
| <b>maskelynitization</b>  | Shock event that converts plagioclase into isotropic phase.   |
| <b>mesostasis</b>         | Fine-grained mineral mass found interstitial to major minerals.   |
| <b>mineralogical mode</b> | the mineral percentages, usually expressed as volume percent  |
| <b>“mineral” separate</b> | An attempt to obtain a concentration of one mineral phase after powdering the rock and using various mechanical means ( <i>e.g.</i> heavy liquids for density difference).              |
| <b>nakhrites</b>          | clinopyroxinites like Nakhla, Lafayette, Governador Valadares, NWA 817, Y000593   |
| <b>NIPR</b>               | National Institute Polar Research, Japan  |

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| <b>NWA</b>                 | North West Africa. Meteorites usually purchased from nomads in Morocco, but probably found in Algeria or even further east in Sahara.                          |
| <b>NZ</b>                  | Normal, basaltic lithology of Zagami.  |
| <b>“orangette”</b>         | New term used to distinguish unusual carbonate globules in ALH84001. However, term never caught on.  |
| <b>ophitic</b>             | Texture of basaltic rock where pyroxene completely encloses plagioclase and other phases.  |
| <b>PAHs</b>                | Polycyclic aromatic hydrocarbons. Organic compounds made up of benzene rings linked together.  |
| <b>Pathfinder</b>          | highly successful mission to Martian surface in 1990s  |
| <b>pre-terrestrial</b>     | The history of the sample before entry into the Earth’s atmosphere - as judged by location with respect to fusion crust.                                       |
| <b>plateau age</b>         | The age obtained from the $^{39}\text{Ar}/^{40}\text{Ar}$ spectrum as function of release temperature.   |
| <b>“pockets” of glass</b>  | The small areas of glass found inside the meteorite specimen.  |
| <b>“pods” of glass</b>     | The small unusual glass areas in EETA79001. See figure IX-24.  |
| <b>poikilitic</b>          | Texture of igneous rock where small granular crystals are irregularly scattered without common orientation in a larger crystal of another mineral.             |
| <b>ppm</b>                 | parts per million or micrograms per gram (unit of concentration)   |
| <b>ppb</b>                 | parts per billion (1 in 1,000,000,000)   |
| <b>Radiogenic Isotopes</b> | Naturally-occurring, radioactive isotopes such as K, Rb, U, Th, Sm that decay at a slow rate to another stable isotope and are used for geological age dating. |
| <b>REE</b>                 | rare earth elements (actually not so rare, generally diagnostic)   |
| <b>RNAA</b>                | radio-nuclear activation analysis (generally superior to INAA, because of use of internal standard)  |
| <b>“rosette”</b>           | A symmetrical growth form, resembling a rose, assumed by an accretionary body. Term often used for barite concretions on Earth.                                |
| <b>SaU</b>                 | Sayh al Uhaymir, Oman  |
| <b>“salts”</b>             | Various non-silicate minerals, possibly residual to aqueous solution, found in cracks of Martian meteorites.   |
| <b>SEM</b>                 | Scanning electron microscope (favored by Dave McKay)   |
| <b>schlieren</b>           | Texture where glass, or mineral phases are drawn out in stringers.   |

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| <b>SIMS</b>            | Secondary Ion Mass Spectroscopy  |
| <b>SNC</b>             | Shergotty, Nakhla, Chassigny, a term used in publications before “Martian meteorites.”   |
| <b>Smithsonian</b>     | see USNM below   |
| <b>SPB</b>             | Shergottite Parent Body = Mars   |
| <b>ST</b>              | The mail code for the “Office of the Curator” at JSC.  |
| <b>shergottites</b>    | Basalts like Shergotty, Zagami, QUE88516, EETA79001B, NWA 480, NWA 1460, NWA 856, NWA 1068, NWA 1110, Dhofar 378, and perhaps others.  |
| <b>TEM</b>             | transmitted electron microscope  |
| <b>terrestrial age</b> | Time interval that meteorite has spent on Earth (for example, can sometimes be determined by determination of carbon 14)   |
| <b>USNM</b>            | United States National Museum, also called the Smithsonian Institution. Washington D.C. Specifically, the Department of Mineral Sciences is a great source of research samples.                                    |
| <b>Viking</b>          | Two highly-successful missions to the surface of Mars in 1976.   |
| <b>“whole-rock”</b>    | Term used for a small sample (50 mg-2 g) of a rock used to determine the chemical composition of the “whole” specimen. Generally selected to be representative of the “whole”, but, obviously, NOT the whole rock. |
| <b>XRF</b>             | X-ray fluorescence   |
| <b>“Yowza-Yowza”</b>   | Term used by 1984 ANSMET team to describe something important. New geological term, not found in Dictionary.   |