

INTRODUCTION

This catalog characterizes each of 543 individually numbered rock samples in the Apollo 16 collection, showing what each sample is and what is known about it. Regolith samples are not included. The catalog is intended to be used by both researchers requiring sample allocations and a broad audience interested in Apollo 16 rocks. The sample descriptions are arranged in numerical order, closely corresponding to the sample collection stations.

Information on sample collection, petrography, chemistry, stable and radiogenic isotopes, surface characteristics, physical properties, and curatorial processing is summarized and referenced as far as it is known. In many cases we found it necessary to re-inspect samples in the laboratory and have new thin sections of several rocks cut. Our intention has been to be comprehensive—we have attempted to include all published studies of any kind which provide information on a sample, as well as some unpublished information. Exceptions are made where the same research group published the same data and conclusions in two journals, in which case one reference (usually the earlier) is chosen; if one is the Proceedings of the Lunar Science Conference, this reference is selected. We have rarely included references which are primarily bulk interpretations of existing data (such as mixing models) or mere lists of samples. The references are complete to early 1980. Foreign language journals were not scrutinized, but as far as we can tell little data has been published only in such journals.

Much valuable information exists in the original Apollo 16 Sample Information Catalog (1972). However, that catalog was compiled and published only three months after the mission itself, from rapid descriptions of usually dust-covered rocks, usually without anything other than macroscopic observations, less often thin sections, and rarely some chemical data. Since that time, the rocks have been extensively studied, analyzed, and split, with numerous published papers. These make the original catalog inadequate, outmoded, and in some cases erroneous, providing the motivation for this revision. However, The Apollo 16 Sample Information Catalog (1972) contains more information on macroscopic observations for most samples than does the present volume. Early catalogs were produced specifically for those rocks collected by raking the regolith: LM area and Station 5 (Keil, Dowty, Prinz); Stations 1, 4, and 13 (Phinney and Lofgren); and Stations 11 and 8 (Smith and Steele). These samples are included in the present catalog.