

PROJECT APOLLO
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TECHNICAL WORKING PAPER

LUNAR ORBITER CATALOG

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LUNAR DATA BANK
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FOREWORD

This working paper presents a compilation of selected Lunar Orbiter photo support data extracted from computer magnetic tapes which were produced by The Boeing Company under the National Aeronautics and Space Administration Contract Number NASA CR-66735-1 through 5. These tapes were processed through the Computation and Analysis Division of the Manned Spacecraft Center, Houston and provided by the National Space Sciences Data Center, Goddard. Persons in and associated with the Mapping Science Laboratory have been hindered in locating the more commonly required photo parameters due to the magnitude and scope of the documents produced by Boeing under the above contract. Formatting of these specific photo parameters in a more concise manner became desirable.

This report was prepared by the Lockheed Electronics Company, Houston Aerospace Systems Division, under contract NAS 9-10951, Action Document number 63-2956-1024-29-3, "Lunar Orbiter Catalog" issued by the Mapping Sciences Laboratory, Manned Spacecraft Center, Houston, Texas.

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I. INTRODUCTION

Efforts of the Mapping Sciences Laboratory (MSL) to use the existing documentary Lunar Orbiter photo support data have pointed out the need for a more concise reference document. From the vast amount of Lunar Orbiter photo support data available on magnetic tape, the items thought to be most useful were selected for inclusion in this catalog of all five missions. These data items are Frame Number, Orbit Number, Time of Exposure, Principal Point Location, Sun Angles at the Principal Point, Spacecraft (and fixed-camera system) Orientation, and Nadir Point Location.

Work is progressing toward a subsequent publication which will provide additional data such as area references, Lunar Chart (LAC) numbers, and some descriptive data. A time delay between publications, however, must be anticipated since these additional items require manual photo interpretive processing before automation of the data is possible. It is expected that these items will be of more value to the scientific community, as well as helpful to the engineers.

II. DISCUSSION

Lunar Orbiter missions are separately listed, each list being in frame number order. Since each frame number consists of two basic parts, two lines of output were produced, e.g..., the "High Resolution" (HR) portion of the frame, and the "Moderate Resolution" (MR) portion of the frame. Data differences between the two portions are often relatively small due to the physical characteristics

of the spacecraft photo system. This fractional difference, however, may be of significance, particularly to engineers.

In producing this catalog, the author has noted some data on the magnetic tape which obviously are erroneous. Where encountered, these data were replaced by a series of asterisks in the appropriate field of the catalog. Since some less obvious data errors may exist, no guarantee of data accuracy should be implied; however, should the user of this catalog discover any data errors, please notify Mr. R. Musgrove, Mail Code TJ , Mapping Sciences Laboratory, Lunar Data Bank Section, Manned Spacecraft Center, Houston, Texas or telephone area code 713, HU3-6287.