

COMPUTER LISTING KEY

PURPOSE: This key is used to determine the characteristics of imagery listed on computer printouts. Individual photographic accessions can be evaluated and selected for ordering.

GENERAL: Each computer listing has three parts:

1. SOURCE HEADING - Indicates origin of listing.
2. SEARCH SUMMARY - Indicates technical specifications of listing.
3. BODY OF DATA - The data can appear in either of two formats with both containing the same information. The "Short" format has two-line accessions (entries of Data items). The first line contains entries identified by headings; the second line contains the corner coordinates. The "Long" format has self-contained, three-line or four-line accessions.

SPECIFIC: Each data item is described in detail:

1. DATA TYPE - For the "Short" format, DATA TYPE is listed at the top of each page and describes all accessions on the page. For the "Long" format, DATA TYPE is listed in each accession. Possible entries are:
 - A. SINGLE PHOTO - Accession describes one image.
 - B. PHOTO SERIES - Accession describes a sequence of two or more overlapping images along a straight line. Additional information is available in the booklet "The EROS Data Center" (EDC Booklet) pp14-15, pp21-23, and at the end of this key.
 - C. PHOTO INDEX - Accession describes a mosaic of several individual images. The PHOTO INDEX, as described by the computer listing, must be purchased and used to identify the specific project, roll and frame designations of the desired individual images, see also EDC Booklet p16, pp21-23.
 - D. LANDSAT - Accession which may describe one Landsat image (Band 8 individual scenes or RBV subscenes) or which may describe two or more images of exactly the same geographic area with different spectral properties (Bands). When ordering Landsat images, it is necessary to specify the band(s) desired when bands are applicable.
2. PATH and ROW - (Landsat imagery only), PATH and ROW designations key the location of each image to the Worldwide Reference System. PATH and ROW cannot be used for ordering, except for the "Selected Landsat Coverage" system. However, they can be used to identify areas for geographic inquiries (Landsat only). NOTE: The ground coverage of Landsat 3 RBV subscenes acquired between Nov. 21, 1978 and Feb. 16, 1979 is offset approximately 30% northward from corresponding MSS path and row designations.
3. IMAGERY TYPE
 - A. Indicates one of "Landsat", "Manned Spacecraft", "NASA Aircraft", or "Aerial Mapping". This indicates general data characteristics and identifies the proper order form.
 - B. Indicates specifically
 1. For Landsat - Satellite number and sensor.
 2. For Manned Spacecraft - Project, project number and (when applicable) sensor.
 3. For Aircraft Data - Acquisition technique, (i.e. "Standard", "Oblique", etc.).
4. ID NUMBER OF THE PHOTO/SCENE - This 13 digit number is used to order the images. If listed, (a) frame number(s) is/are also required for ordering. (See below).
5. FRAME NUMBERS - Some aircraft accessions list frame numbers. If the accession represents only one frame, a single number is listed. If more than one frame is represented, two numbers are listed: a beginning frame, and an ending frame. (See also PHOTO SERIES above)

6. FILM SOURCE - Dictates the type and sizes of products available. The products available are identified in product code tables on the order forms. Based on the IMAGERY TYPE and FILM SOURCE the proper order form and table or portion of a table must be identified. Only the products indicated are available. The codes used on the listings are: B/W-Black and White, COL-Color, CIR-Color Infrared. On the order forms, "COL" is used for both color and color infrared.
7. INDEX TYPE - Is equivalent to FILM SOURCE except that it refers only to PHOTO INDEXES. (See also PHOTO INDEX above)
8. QUALITY OF THE IMAGERY - Is rated 0-9 with 9 being the best.
 - A. For SINGLE PHOTOS a single quality is listed.
 - B. For PHOTO SERIES the quality listed applies to each frame in the sequence.
 - C. For PHOTO INDEXES, the quality listed applies to the images from which the index was made.
 - D. For LANDSAT imagery, each band/image is rated individually in sequence. An asterisk (*) indicates no data. An "R" indicates that this master image must be regenerated before a final product is produced. An "M" indicates that this band is missing and cannot be ordered. Note: Quality rating is subjective and based on many characteristics of the imagery and therefore does not directly indicate image useability for any given purpose.
9. CLOUD COVER - Indicates the percentage, in increments of 10, of the image obscured by clouds and their shadows. Note: Classification of percent of cloudcover is subjective and is relative to the types and amount of clouds appearing on the image and not to their location.
10. DATE OF IMAGE EXPOSURE - Indicates the month, day and year that the image was taken.
11. CENTER POINT
 - A. SINGLE PHOTO and
 - B. LANDSAT DATA TYPES - The latitude and longitude in degrees, minutes, and seconds for the geographic center of the image is listed.
 - C. PHOTO SERIES DATA TYPE - The geographic center of the first frame of the series is listed. (See also PHOTO SERIES above)
12. SCALE
 - A. PHOTO INDEXES - The scale listed is that of the images from which the index is made, not that of the index itself.
 - B. For all other data types the scale is that of the original imagery.
13. MICROFORM LOCATION - For Non-Landsat data defines the cassette and frame number of the microfilm copy of the image. In the case of Landsat data if the first digit is "B" the next ten digits will define the cassette and frame number of the microfilm copy of the image. If the first digit is "D" the next ten digits will define the zone, path, year, month, and day of the microfiche copy of the image. Both types of microfilm are maintained by various NCIC facilities. (See EDC Booklet pp5-7)
14. COL - For Black and White Landsat only, this indicates the availability of a False Color Composite. An "N" indicates that a color composite cannot be made. A "numeric" character indicates the quality of the color composite if a color exists. A "P" indicates that a composite has not been processed, but could be. Such composites can be processed at the requesters expense. (See the Landsat Order Form "Color Composite Generation") However, a small percentage will prove to be impossible to process, in which case the requester can identify a substitute or request a refund. The price of products desired is not included in the color composite generation charge. It should also be noted that neither the RBV subscene data nor the individual MSS Band 8 data can be requested as color composites.

15. GAIN - This field refers to the MSS image gain as the image was acquired. An "L" indicates that all MSS bands are in low gain, whereas an "H" indicates that MSS bands 4 and 5 are in high gain.
16. MODE - Reflects the mode which was used to acquire MSS bands 4, 5, and 6. A "C" indicates that a compression mode was used. An "L" indicates a linear mode (bands 7 and 8 are always linear).
17. CCT - For Landsat only, this indicates the availability of BIP2 (Band Interleaved by Pixel or Goddard Space Flight Center Document X-563-73-206) Computer Compatible Tapes. An "N" indicates that a CCT is not available. A "Y" indicates that a CCT is available. A library of the BIP2 CCTs will be maintained for making direct copy CCTs. Sometime during late 1978, CCTs for new Landsat images will be processed directly from a High Density Tape (HDT) in two new formats: BSQ (Band Sequential for MSS data and Scene Sequential for RBV Data), BIL (Band Interleaved by Line for MSS data only). The standard format will be BSQ unless a customer specifies otherwise. Please note CCTs for RBV subscenes are not available until late 1978.
18. CORRECTION - The geometric correction utilized during the processing of the image. A "U" indicates uncorrected, an "R" indicates corrected using relative ground control points, a "G" indicates corrected using ground control points and an "S" indicates system corrected.
19. RESAMTECH - Identifies which resampling technique was used during the image processing. A "C" indicates cubic convolution, whereas an "N" indicates nearest neighbor.
20. PROJECTION - Describes the type of map projection applied during image processing. An "S" indicates Space Oblique Mercator (SOM), an "L" indicates Lambert Conformal, an "H" indicates Hotine Oblique Mercator (HOM), a "U" indicates Universal Transmercator (UTM) and a "P" indicates Polar Stereographic.
Note: The Gain and Mode fields on both formats and the Correction, Resamtech and Projection fields on the "Long" format refer only to Landsat data. An "*" indicates that the field does not apply and an "X" in any of these fields indicates that the appropriate information is unknown.
21. CORNER POINT COORDINATES
 - A. SINGLE PHOTO and
 - B. LANDSAT DATA TYPES - The latitude and longitude coordinates in degrees, minutes, and seconds of the image corners are listed. NOTE: The Landsat corner point coordinates are calculated from average values, therefore these coordinates are subject to a + or - 10% error.
 - C. PHOTO SERIES DATA TYPES - The coordinates of the corners of the series are listed.
 - D. PHOTO INDEX DATA TYPES - The coordinates of the corners of the index itself, not the component imagery are listed.

HOW TO IDENTIFY INDIVIDUAL FRAMES WITHIN IN A PHOTO SERIES
(REFER TO "DATA TYPE")

Some Aircraft imagery is available by a strip of photographic coverage which describes two or more overlapping images along a single straight flight line segment.

To determine the strip coverage and the actual frame number to order, it is necessary to complete the following steps:

1. Obtain a map containing latitude/longitude coordinates of the area covered by the photo series. The map selected must provide sufficient resolution to allow plotting and interpreting photo coverage.
2. Plot the latitude/longitude point of the four CORNER POINT COORDINATES given on the computer listing, and connect by lines to form a rectangle of the total area covered by the photo series. (see figure 1)
3. Plot the FIRST FRAME CENTER COORDINATE, also given on the computer listing.
4. To determine the last frame center point, measure the distance from the edge of photo series to the first frame center point (distance A, figure 1), and plot an equal distance from the opposite end of the photo strip.
5. Using a ruler (or divider), determine all intermediate center points. Note that this distance will be less than the distance (A) due to forward overlap.
6. Number the center points, beginning with the FIRST FRAME number given on the computer listing. The last center point number should agree with the LAST FRAME number on the listing.
7. Make a square paper template to indicate individual photo coverage. The square should have sides equal to rectangle height (two times distance A).
8. Center the template over individual center points to determine the actual area covered by each photograph.
9. Select the frame numbers you wish to order, and complete the order form in accordance with instructions on the reverse side.

Plotting Photo Series Coverage
60% overlap
First Frame=37 Last Frame=48

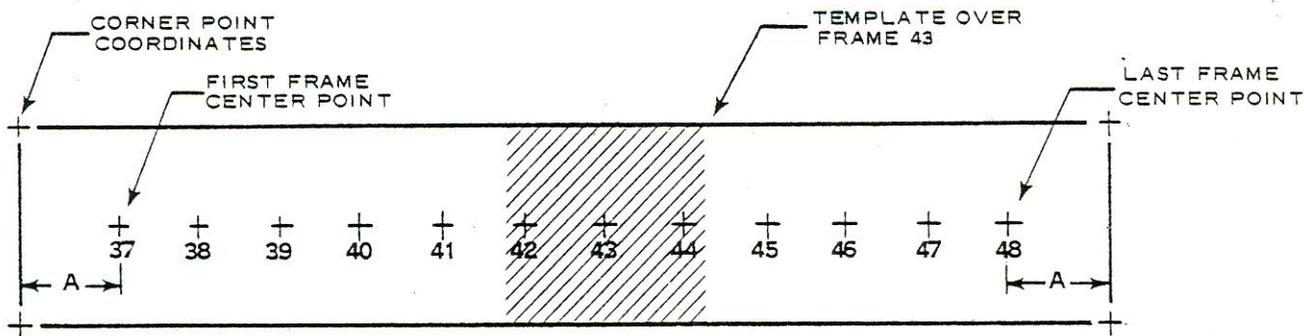


Figure 1