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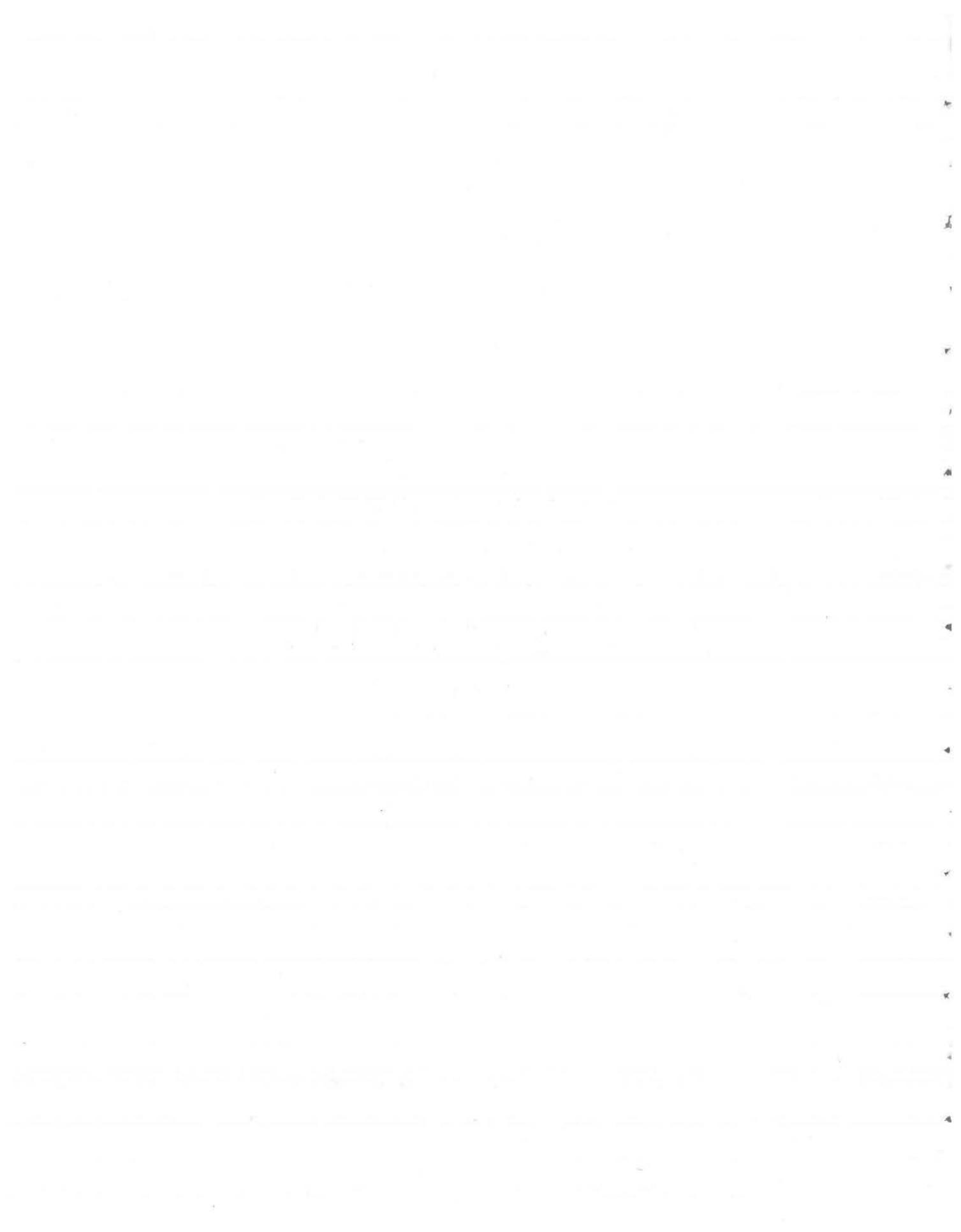
Documentation of Apollo 15 samples

by

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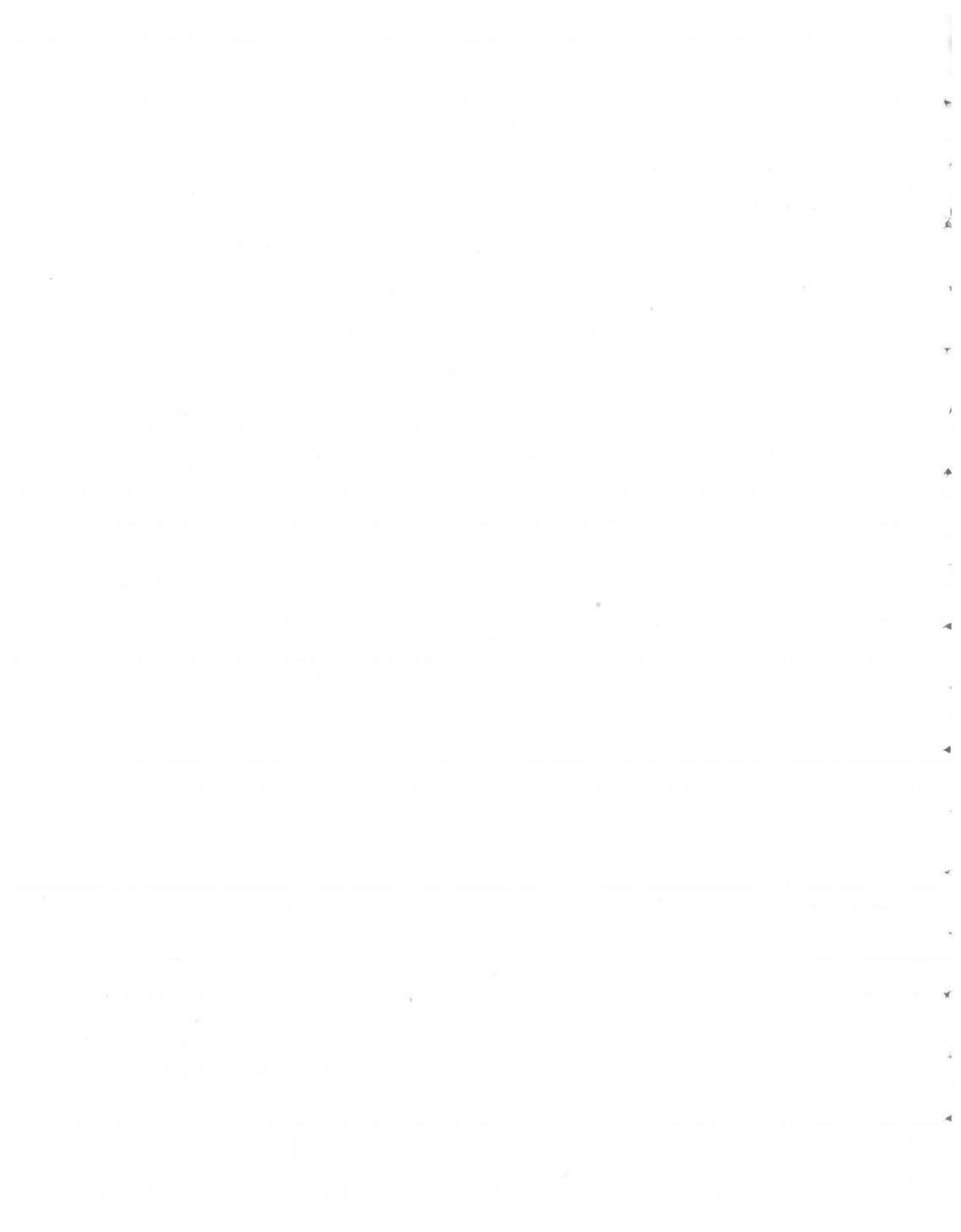
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## INTRODUCTION

This is a sample catalog designed to show the documentation of Apollo 15 samples using photographs and verbal descriptions returned from the lunar surface by astronauts David R. Scott (Commander) and James B. Irwin (Lunar Module Pilot). Much of the material in this report was drawn from, and is intended to supersede, an earlier report by Sutton and others (1971)<sup>1</sup>. Where discrepancies occur between the location and numbering of samples in this report and an earlier report by Swann and others (1971)<sup>2</sup>, this report should be considered as the more accurate.

Almost all of the Apollo 15 samples have been correlated with lunar surface photographs, descriptions, and traverse locations. Where possible, the lunar orientations of rock samples have been reconstructed in the Lunar Receiving Laboratory (LRL), using a collimated light source to reproduce illumination and shadow characteristics of the same samples shown in lunar photographs. In several cases samples have not been recognized in lunar surface photographs, and their approximate locations are known only by association with numbered sample bags used during their collection. Tables, photographs, and maps included in this report are designed to aid in the understanding of the lunar setting of the Apollo 15 samples.

<sup>1</sup>Sutton and others, 1971, Preliminary documentation of the Apollo 15 samples: U.S. Geological Survey Interagency Report 34, 150 p.

<sup>2</sup>Swann and others, 1971, Preliminary description of Apollo 15 sample environments, U.S. Geological Survey Interagency Report 36, 219 p.

Five tables are included which list samples in various ways. Table 1 shows sample types, locations, and documented container numbers. It also serves as an index which shows page numbers of documentation photographs in this report. Table 2 lists all samples that weigh more than 25 grams. Table 3 shows correlations between sample numbers that have been changed or combined since their initial number designations. Table 4 correlates samples with lunar surface photographs. Table 5 is a cross-reference between samples and weights, locations, documentation photographs, time sequence of sampling on the lunar surface, and comments by the crew pertaining to specific samples.

Sample numbers are shown in their complete form (i.e. 15016) in all tables except Table 4. In Table 4, in map sketches, and in photographs, sample numbers are shortened by dropping the prefix "15."

Photographic documentation of samples is presented in the following general way. The sequence of photographs is in order of ascending LRL numbers, as far as possible. Many of the samples are shown first by a down-sun lunar surface photograph that commonly includes the general setting of the sample, followed by a cross-sun photograph (taken from closer range) that shows more details of the sample and its local environment. These two photographs suffice for most rake samples, scooped fines, and drive tubes. For oriented rock samples the photographic documentation is extended to include an enlargement of the cross-sun photograph with an insert that shows the laboratory reconstruction of the sample's lunar

orientation. This is followed by an orthogonal layout of documentary LRL "mugshots" (NASA photograph numbers are shown in the schematic diagram) of the sample that best portray its lunar top, bottom, and sides. The lunar top is indicated by direction symbols, which also show the lunar azimuthal orientation.

Where possible, the pages are arranged so that the photographs most relevant to one another are on facing pages. Thus there are a few blank pages throughout the report.

Selected photographic panoramas taken at the traverse stations are also included in this catalog, as fold-out pages at the end. Each panorama is accompanied by a small planimetric map that shows the relative locations of samples, significant blocks and craters, and the Rover. In addition, samples are identified in the panorama photographs.

#### ACKNOWLEDGMENTS

We wish to thank the crew of Apollo 15 for supplying the excellent lunar photographs and sample descriptions included here. Their comments concerning samples, after the mission, were an additional help in preparing this catalog.

We gratefully acknowledge the direct sample handling and photographic support given by personnel of Brown and Root-Northrop in the Lunar Receiving Laboratory, Manned Spacecraft Center, Houston, Texas.

We acknowledge with great appreciation the major contribution of the staff of the Technical Support Unit, Center of Astrogeology, in preparing the illustrations presented here.

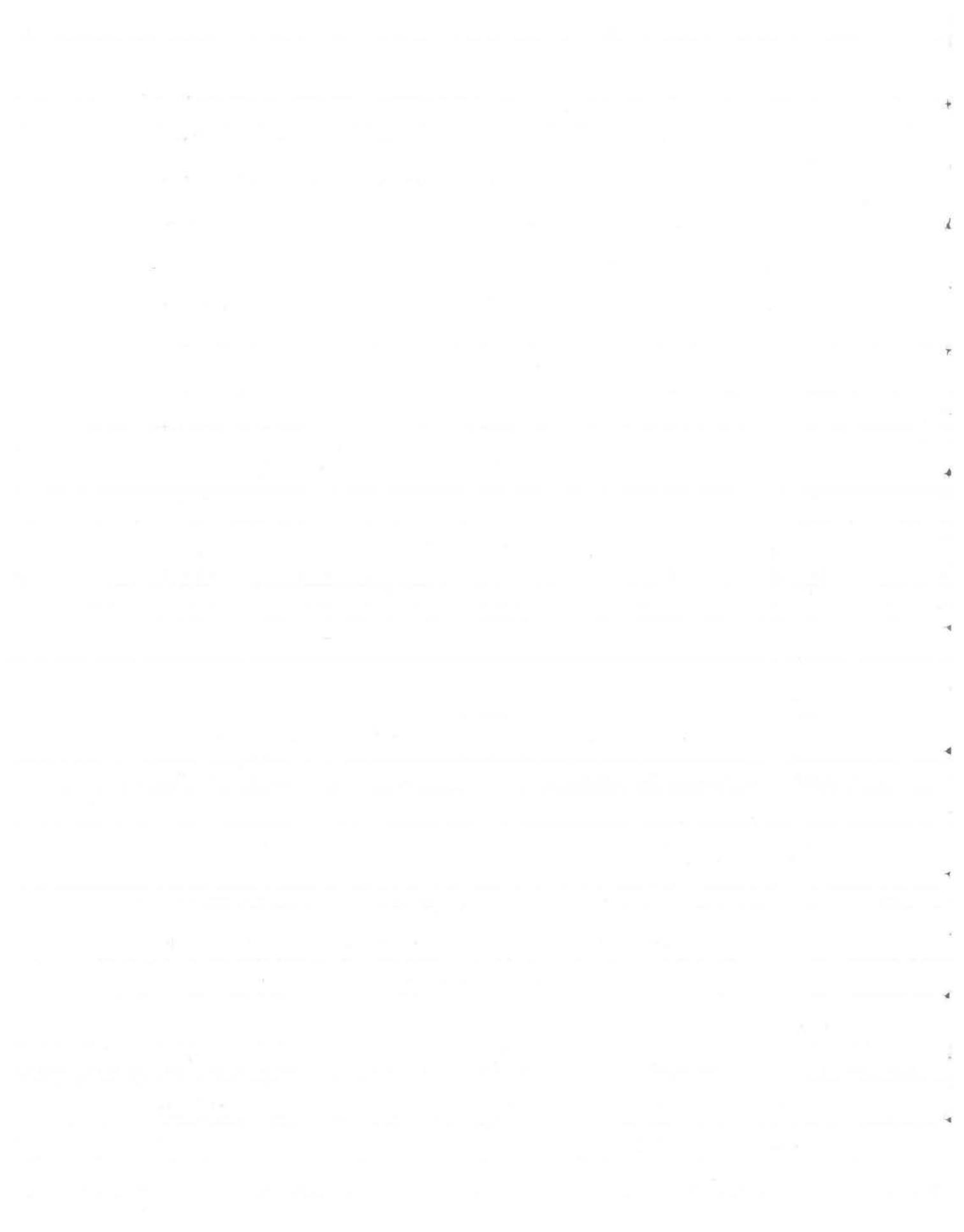


Table 1. Apollo 15 samples correlated with types, locations, sample bag numbers and pages in report.

| <u>Sample Number</u> |  | <u>Station</u> | <u>SCB/DB</u> | <u>Pages</u> |
|----------------------|--|----------------|---------------|--------------|
| 15001-15006          | Drill Stem   | 8              | 2/-           | 12           |
| 15007-15008          | Cores U-03/L-10<br>(008) (007)                         | 2              | 1/-           | 13,14,65     |
| 15009                | Core U-07  | 6              | 5/-           | 15,16        |
| 15010-15011          | Cores U-09/L-14<br>(010) (011)                         | 9a             | 7/-           | 17,18        |
| 15012                | SESC-1   | 6              | 5/-           | 19-22        |
| 15013                | SESC (blank)   | LM             | 7/-           | 23,24        |
| 15014                | SESC-2   | 8              | 5/-           | 25,26        |
|                      | <u>Fines</u> <u>Basalt</u> <u>Breccia</u> <u>Glass</u> |                |               |              |
| 15015                |  | LM             | 4/-           | 27-30,40     |
| 15016                | X  | 3              | 4/-           | 31-34        |
| 15017                |  | LM             | 5/162         | 35-37,40     |
| 15018                |  | LM             | 5/162         | 35,36        |
| 15019                |  | LM             | 5/162         | 35,36        |
| 15020-15024          | X  | LM             | CSB           | 40,41        |
| 15025                |  | LM             | CSB           | 40,41        |
| 15026                |  | LM             | CSB           | 40,41        |
| 15027                |  | LM             | 5/162         | 35-38,40     |
| 15028                |  | LM             | 5/162         | 35-37,39,40  |
| 15030-15034          | X  | 8              | 6/252         | 25,26        |
| 15040-15044          | X  | 8              | 6/253         | 25,26        |
| 15058                | X  | ALSEP          | 6/-           | 42-46        |
| 15059                |  | ALSEP          | 6/-           | 47-50        |
| 15065                | Gabbro   | 1              | 1/156         | 51-54        |
| 15070-15074          | X  | 1              | 1/157         | 55,56        |
| 15075,15076          | Gabbro   | 1              | 1/157         | 55-59        |
| 15080-15084          | X  | 1              | 1/158         | 60,61        |
| 15085                | X  | 1              | 1/158         | 60-63        |
| 15086                |  | 1              | 1/158         | 60-62,64     |
| 15087                | Gabbro   | 1              | 1/158         | 60-61        |
| 15088                |  | 1              | 1/158         | 60,61        |
| 15090-15093          | X  | 2              | 1/159         | 65,66        |
| 15095                |  | 2              | 1/159         | 65,66        |
| 15100-15104          | X  | 2              | 1/187         | 65,67,68     |
| 15105                | X  | 2              | 1/187         | 65,67,68     |
| 15115                | X  | 2              | 1/186         | 65,67,68     |
| 15116                | Gabbro   | 2              | 1/186         | 65,67,68     |
| 15117                | X  | 2              | 1/186         | 65,67,68     |
| 15118                | X  | 2              | 1/186         | 65,67,68     |
| 15119                | X + X  | 2              | 1/186         | 65,67,68     |
| 15125                | X  | 2              | 1/186         | 65,67,68     |
| 15135                |  | 2              | 1/186         | 65,67,68     |
| 15145-15148          |  | 2              | 1/186         | 65,67,68     |

Table 1. (continued)

| Sample Number | Fines           | Basalt               | Breccia | Glass | Station | SCB/DB | Pages           |
|---------------|-----------------|----------------------|---------|-------|---------|--------|-----------------|
| 15200-15204   | X               |                      |         |       | 2       | 1/160  | 65,69,70,71     |
| 15205         |                 |                      | X       | X     | 2       | 1/161  | 65,69-73        |
| 15206         |                 |                      | X       | X     | 2       | 1/160  | 65,69-71,74     |
| 15210-15214   | X               |                      |         |       | 2       | 1/180  | 65,69,75-78     |
| 15220-15224   | X               |                      |         |       | 2       | 1/181  | 65,69,75-78     |
| 15230-15234   | X               |                      |         |       | 2       | 1/182  | 65,69,77,78     |
| 15240-15244   | X               |                      |         |       | 6       | 3/163  | 69,79,80        |
| 15245         |                 |                      | X       | X     | 6       | 3/163  | 79,80           |
| 15250-15254   | X               |                      |         |       | 6       | 3/164  | 79,80           |
| 15255         |                 |                      | X       | X     | 6       | 5/190  | 81-84           |
| 15256         |                 | X                    |         |       | 6       | 5/190  | 81,82,85,86     |
| 15257         |                 |                      | X       |       | 6       | 5/190  | 81,82           |
| 15259         |                 |                      | X       |       | 6       | 5/192  | 87,88           |
| 15260-15264   | X               |                      |         |       | 6       | 3/166  | 19-22           |
| 15265-15267   |                 |                      | X       |       | 6       | 5/193  | 87-93           |
| 15268         |                 |                      | X       |       | 6       | 5/192  | 87-93           |
| 15269         |                 |                      | X       | X     | 6       | 5/192  | 87-93           |
| 15270-15274   | X               |                      |         |       | 6       | 3/167  | 95,96           |
| 15281-15284   | X (SCB residue) |                      |         |       | 6       | 3/-    | N/A             |
| 15285         |                 |                      | X       |       | 6       | 5/192  | 87-94           |
| 15286         |                 | X +                  | X +     | X     | 6       | 5/192  | 87-89           |
| 15287         |                 |                      | X       |       | 6       | 5/192  | 87-89           |
| 15288         |                 |                      | X       | X     | 6       | 5/192  | 87-89,93        |
| 15289         |                 |                      | X       |       | 6       | 5/192  | 87-89           |
| 15290-15294   | X               |                      |         |       | 6       | 3/188  | 97,98           |
| 15295         |                 |                      | X       |       | 6       | 3/188  | 97,98           |
| 15297         | (Chips)         |                      | X       |       | 6       | 3/-    | N/A             |
| 15298-15299   |                 |                      | X       |       | 6       | 3/-    | 99-102          |
| 15300-15305   | X               |                      |         |       | 7       | 3/173  | 103             |
| 15306         |                 |                      | X       |       | 7       | 3/173  | 103             |
| 15307         |                 |                      |         | X     | 7       | 3/173  | 103             |
| 15308         |                 |                      | X       |       | 7       | 3/173  | 103             |
| 15310-15314   | X               |                      |         |       | 7       | 3/172  | 103             |
| 15315-15320   |                 | X in                 | X       |       | 7       | 3/172  | 103             |
| 15321-15360   |                 |                      | X       |       | 7       | 3/172  | 103             |
| 15361         |                 | Pale green rock      |         |       | 7       | 3/172  | 103             |
| 15362-15364   |                 | Anorthosite          |         |       | 7       | 3/172  | 103             |
| 15365-15377   |                 |                      | X +     | X     | 7       | 3/172  | 103             |
| 15378-15384   |                 | X (non-mare)         |         |       | 7       | 3/172  | 103             |
| 15385-15388   |                 | X (mare)             |         |       | 7       | 3/172  | 103             |
| 15389-15392   |                 |                      |         | X     | 7       | 3/172  | 103             |
| 15400-15404   | X               |                      |         |       | 6a      | 6/168  | 104-107         |
| 15405         |                 |                      | X       |       | 6a      | 6/168  | 104-107         |
| 15410-15414   | X               |                      |         |       | 7       | 3/194  | 108-110         |
| 15415         |                 | Anorthosite          |         |       | 7       | 3/196  | 113-116,122     |
| 15417-15419   |                 |                      | X       |       | 7       | 3/194  | 108-112,121     |
| 15421-15424   | X               |                      |         |       | 7       | 3/195  | 117,118,120     |
| 15425-15427   |                 | Green and gray clods |         |       | 7       | 3/195  | 117-120         |
| 15431-15434   | X               |                      |         |       | 7       | 5/170  | 113,114,121-123 |
| 15435         |                 | Gray clods           |         |       | 7       | 5/170  | 113,114,121-123 |

Table 1. (continued)

| Sample Number | Fines           | Basalt        | Breccia   | Glass | Station | SCB/DB | Pages           |
|---------------|-----------------|---------------|-----------|-------|---------|--------|-----------------|
| 15445         |                 |               | X         |       | 7       | 6/171  | 124-126         |
| 15455         |                 |               | X         |       | 7       | 7/198  | 127,128         |
| 15459         |                 |               | X         |       | 7       | 6/-    | 129-132         |
| 15465         |                 |               | X         | X     | 7       | 5/199  | 133-136         |
| 15466         |                 |               |           | X     | 7       | 5/199  | 133,134,137,138 |
| 15467         |                 |               | X         | X     | 7       | 5/199  | 133,134         |
| 15468         |                 |               | X         | +     | X       | 5/199  | 133,134         |
| 15470-15474   | X               |               |           |       | 4       | 5/203  | 139,140         |
| 15475,15476   |                 | X             |           |       | 4       | 5/203  | 139-142         |
| 15485,15486   |                 | X             |           |       | 4       | 5/204  | 145-146         |
| 15495         |                 | Gabbro        |           |       | 4       | 5/174  | 139-141,143     |
| 15498         |                 |               | X         | X     | 4       | 6/-    | 144             |
| 15499         |                 | X             |           |       | 4       | 5/-    | 145-147         |
| 15500-15504   | X               |               |           |       | 9       | 7/255  | 148,149         |
| 15505,15506   |                 |               | X         | X     | 9       | 7/255  | 148-151         |
| 15507         |                 |               |           | X     | 9       | 7/255  | 148,149         |
| 15508         |                 |               | X         | X     | 9       | 7/255  | 148,149         |
| 15510-15514   | X               |               |           |       | 9       | 7/273  | 152,153         |
| 15515         |                 | Brownish gray | clods     |       | 9       | 7/273  | 152,153         |
| 15528         |                 |               | X         |       | 9a      | 2/274  | 154,155         |
| 15529         |                 | X             |           |       | 9a      | 2/274  | 154-157         |
| 15530-15534   | X               |               |           |       | 9a      | 7/275  | 158-162         |
| 15535-15537   |                 | X             |           |       | 9a      | 7/275  | 158-166         |
| 15538         |                 | Gabbro        |           |       | 9a      | 7/275  | 158-162         |
| 15545-15548   |                 | X             |           |       | 9a      | 7/278  | 158,161,162,167 |
| 15555         |                 | X             |           |       | 9a      | BSLSS  | 168-170         |
| 15556,15557   |                 | X             |           |       | 9a      | 2/-    | 171-178         |
| 15558         |                 |               | X         |       | 9→LM    | 2/-    | N/A             |
| 15561-15564   | X (Bag residue) |               |           |       | 9→LM    | 2/-    | N/A             |
| 15565         |                 |               | X (Chips) |       | 9→LM    | 2/-    | N/A             |
| 15595-15598   |                 | X             |           |       | 9a      | 7/281  | 158,159,179-183 |
| 15600-15604   | X               |               |           |       | 9a      | 7/283  | 184-186         |
| 15605-15610   |                 | X             |           |       | 9a      | 7/283  | 184-186         |
| 15612-15683   |                 | X             |           |       | 9a      | 7/282  | 184-186         |
| 15684-15689   |                 |               | X         | +     | X       | 7/282  | 184-186         |
| 15901         | X (DB residue)  |               |           |       | 1       | 1/156  | 51-54           |
| 15902         | X (DB residue)  |               |           |       | 1       | 1/157  | 55-59           |
| 15903         | X (DB residue)  |               |           |       | 1       | 1/158  | 60-64           |
| 15904         | X (DB residue)  |               |           |       | 2       | 1/159  | 65,66           |
| 15906         | X (DB residue)  |               |           |       | 2       | 1/160  | 65,69-71        |
| 15907         | X (DB residue)  |               |           |       | 2       | 1/181  | 65,69,75-78     |
| 15908         | X (DB residue)  |               |           |       | 2       | 1/161  | 65,69-73        |
| 15909         | X (DB residue)  |               |           |       | 2       | 1/182  | 65,69,77,78     |
| 15910         | X (DB residue)  |               |           |       | 2       | 1/186  | 65,67,68        |
| 15911         | X (DB residue)  |               |           |       | 2       | 1/187  | 65,67,68        |
| 15912         | X (DB residue)  |               |           |       | LM      | 5/162  | 35-40           |
| 15916         | X (DB residue)  |               |           |       | 6       | 5/190  | 81-86           |
| 15917         | X (DB residue)  |               |           |       | 6       | 5/192  | 87-93           |
| 15918         | X (DB residue)  |               |           |       | 6       | 5/193  | 87-93           |

Table 1. (continued)

| <u>Sample Number</u> | <u>Fines</u>    | <u>Basalt</u> | <u>Breccia</u> | <u>Glass</u> | <u>Station</u> | <u>SCB/DB</u> | <u>Pages</u>    |
|----------------------|-----------------|---------------|----------------|--------------|----------------|---------------|-----------------|
| 15924                | X (DB residue)  |               |                |              | 7              | 3/196         | 113-116,122     |
| 15925                | X (DB residue)  |               |                |              | 7              | 5/170         | 113,114,121-123 |
| 15926                | X (DB residue)  |               |                |              | 7              | 5/198         | 127,128         |
| 15927                | X (DB residue)  |               |                |              | 7              | 5/199         | 133-138         |
| 15931                | X (DB residue)  |               |                |              | 4              | 5/203         | 139-142         |
| 15932                | X (DB residue)  |               |                |              | 4              | 5/174         | 139-142         |
| 15933                | X (DB residue)  |               |                |              | 4              | 5/204         | 145,146         |
| 15936                | X (DB residue)  |               |                |              | 9              | 7/273         | 152-153         |
| 15937                | X (DB residue)  |               |                |              | 9              | 7/255         | 149-151         |
| 15938                | X (DB residue)  |               |                |              | 9a             | 2/274         | 154-157         |
| 15939                | X (DB residue)  |               |                |              | 9a             | 7/275         | 158-162         |
| 15940                | X (DB residue)  |               |                |              | 9a             | 7/278         | 158,161,162,167 |
| 15941                | X (DB residue)  |               |                |              | 9a             | 7/281         | 158,159,179-183 |
| 15942                | X (DB residue)  |               |                |              | 9a             | 7/282         | 184-186         |
| 15943                | X (DB residue)  |               |                |              | 9a             | 7/283         | 184-186         |
| 15951                | X (SCB residue) |               |                |              | EVA 1          | 1/-           | N/A             |
| 15954                | X (SCB residue) |               |                |              | EVA 1          | 4/-           | N/A             |
| 15955                | X (SCB residue) |               |                |              | EVA 2          | 5/-           | N/A             |
| 15956                | X (SCB residue) |               |                |              | EVA 2          | 6/-           | N/A             |
| 15957                | X (SCB residue) |               |                |              | EVA 3          | 7/-           | N/A             |

Table 2. Apollo 15 rock samples weighing more than 25 g.

| Sample Number | Weight (g) | Bag     | Station | Basalt/Breccia/Glassy  | Status of Recovering Orientation |
|---------------|------------|---------|---------|------------------------|----------------------------------|
| 15015         | 4770.2     | SCB-4   | LM      | X X X                  | Tentative                        |
| 15016         | 923.7      | SCB-4   | 3       | X                      | Yes                              |
| 15025         | 77.3       | Contin. | LM      | X                      | No                               |
| 15027         | 51.0       | 162     | LM      | X X                    | Yes                              |
| 15028         | 59.4       | 162     | LM      | X X                    | Yes                              |
| 15058         | 2672.5     | SCB-6   | ALSEP   | X                      | Yes                              |
| 15059         | 1149.2     | SCB-6   | ALSEP   | X X                    | Yes                              |
| 15065         | 1475.5     | 156     | 1       | Gabbro                 | Yes                              |
| 15075         | 809.3      | 157     | 1       | Gabbro                 | Yes                              |
| 15076         | 400.5      | 157     | 1       | X                      | Yes                              |
| 15085         | 471.3      | 158     | 1       | X                      | Yes                              |
| 15086         | 216.5      | 158     | 1       | X                      | Yes                              |
| 15095         | 25.5       | 159     | 2       | X                      | No                               |
| 15118         | 27.6       | 186     | 2       | X                      | Rake No                          |
| 15205         | 337.3      | 161     | 2       | X X X                  | Yes                              |
| 15206         | 92.0       | 160     | 2       | X X X                  | Yes                              |
| 15255         | 240.4      | 190     | 6       | X X X                  | Yes                              |
| 15256         | 201.0      | 190     | 6       | X                      | Yes                              |
| 15265         | 314.1      | 193     | 6       | X                      | Yes after splitting              |
| 15266         | 271.4      | 193     | 6       | X                      | Yes                              |
| 15285         | 264.2      | 192     | 6       | X                      | Yes                              |
| 15286         | 34.6       | 192     | 6       | X                      | No                               |
| 15287         | 44.9       | 192     | 6       | X                      | No                               |
| 15288         | 70.5       | 192     | 6       | X                      | No                               |
| 15295         | 947.3      | 188     | 6       | X                      | No                               |
| 15298         | 1731.4     | SCB-3   | 6       | X                      | No                               |
| 15299         | 1691.7     | SCB-3   | 6       | X                      | No                               |
| 15306         | 134.2      | 173     | 7       | X                      | No                               |
| 15315         | 35.6       | 172     | 7       | X                      | Rake No                          |
| 15324         | 32.3       | 172     | 7       | X                      | Rake No                          |
| 15325         | 57.8       | 172     | 7       | X                      | Rake No                          |
| 15330         | 57.8       | 172     | 7       | X                      | Rake No                          |
| 15379         | 64.3       | 172     | 7       | X                      | Rake No                          |
| 15405         | 513.1      | 168     | 6a      | X                      | No                               |
| 15415         | 269.4      | 196     | 7       | Anorthosite            | Yes                              |
| 15418         | 1140.7     | 194     | 7       | X                      | Yes                              |
| 15425         | 136.3      | 195     | 7       | Green gray clods       | Broken No                        |
| 15426         | 223.6      | 195     | 7       | Green gray clods       | Broken No                        |
| 15427         | 115.9      |         | 7       | Green gray clods       | Broken No                        |
| 15435         | 206.8      | 170     | 7       | Gray clods             | No                               |
| 15445         | 287.2      | 171     | 7       | X                      | Yes                              |
| 15455         | 885.4      | 198     | 7       | X                      | Broken                           |
| 15459         | 5854.0     | SCB-6   | 7       | X                      | Tentative                        |
| 15465         | 376.0      | 199     | 7       | X                      | Tentative                        |
| 15466         | 119.2      | 199     | 7       | Dark glass with clasts | Tentative                        |
| 15475         | 406.8      | 203     | 4       | X                      | Yes                              |

Table 2. (continued)

| <u>Sample Number</u> | <u>Weight (g)</u> | <u>Bag</u> | <u>Station</u> | <u>Basalt/Breccia/Glassy</u> | <u>Status of Recovering Orientation</u> |
|----------------------|-------------------|------------|----------------|------------------------------|---|
| 15476                | 266.3             | 203        | 4              | X                            | Yes                                     |
| 15485                | 104.9             | 204        | 4              | X                            | Partial                                 |
| 15486                | 46.8              | 204        | 4              | X                            | Partial                                 |
| 15495                | 908.9             | 174        | 4              | X                            | Yes                                     |
| 15498                | 2339.8            | SCB-6      | 4              | X                            | Tentative                               |
| 15499                | 2024.0            | SCB-6      | 4              | X                            | Yes                                     |
| 15505                | 1147.4            | 255        | 9              | X                            | Yes                                     |
| 15515                | 144.7             | 273        | 9              | Brownish gray clods          | Broken No                               |
| 15529                | 1531.0            | 274        | 9a             | X                            | Yes                                     |
| 15535                | 404.4             | 275        | 9a             | X                            | Yes                                     |
| 15536                | 317.2             | 275        | 9a             | X                            | Yes                                     |
| 15545                | 746.6             | 278        | 9a             | X                            | No                                      |
| 15546                | 27.8              | 278        | 9a             | X                            | No                                      |
| 15555                | 9613.7            | BSLSS      | 9a             | X                            | Yes                                     |
| 15556                | 1542.3            | SCB-2      | 9a             | X                            | Yes                                     |
| 15557                | 2518.0            | SCB-2      | 9a             | X                            | Yes                                     |
| 15558                | 1333.3            | SCB-2      | 9 LM           | X                            | No                                      |
| 15565                | 822.6             | SCB-2      | 9 LM           | X                            | No                                      |
| 15595                | 237.6             | 281        | 9a             | X                            | Yes                                     |
| 15596                | 224.8             | 281        | 9a             | X                            | Yes                                     |
| 15597                | 145.7             | 281        | 9a             | X                            | No                                      |
| 15598                | 135.7             | 281        | 9a             | X                            |   |
| 15622                | 29.5              | 282        | 9a             | X                            | Rake No                                 |
| 15636                | 336.7             | 282        | 9a             | X                            | Rake No                                 |
| 15647                | 48.1              | 282        | 9a             | X                            | Rake No                                 |
| 15674                | 35.7              | 282        | 9a             | X                            | Rake No                                 |
| 15675                | 34.5              | 282        | 9a             | X                            | Rake No                                 |
| 15676                | 25.3              | 282        | 9a             | X                            | Rake No                                 |
| 15682                | 50.6              | 282        | 9a             | X                            | Rake No                                 |

↳ Samples collected from the same boulder.

Table 3. Summary of renumbered samples.

| <u>Present Number</u> | <u>Initial Number*</u> |
|-----------------------|------------------------|
| 15288,1               | 15258                  |
| 15475,1               | 15477                  |
| 15475,2               | 15478                  |
| 15485,1               | 15487                  |
| 15515,1-48            | 15515 + 15516          |
| 15421-15424, 15427    | 15923                  |
| 15465,1               | 15469                  |
|                       | 15565-15569            |
| 15565,1-38            | 15575-15579            |
|                       | 15585-15587            |

\*As listed in USGS Interagency Report 34.



Figure 1. Map of sampling stations in the Apollo 15 landing site.



Figure 2. Samples 001-006 collected at station 8 with deep drill. Pre-sampling, up-sun photograph AS15-92-12428, looking east.



Figure 3. Samples 007 and 008 collected at station 2 in the double core tube. Pre-sampling, cross-sun photograph AS15-85-11443, looking northwest.



Figure 4. Samples 007 and 008 (008 over 007) collected in a double core at station 2. Post-driving of core, cross-sun photograph AS15-86-11578, looking south.



*Figure 5. Area of sample 009 collected at station 6 in a single core. Pre-sampling, down-sun photograph AS15-85-11527, looking west.*

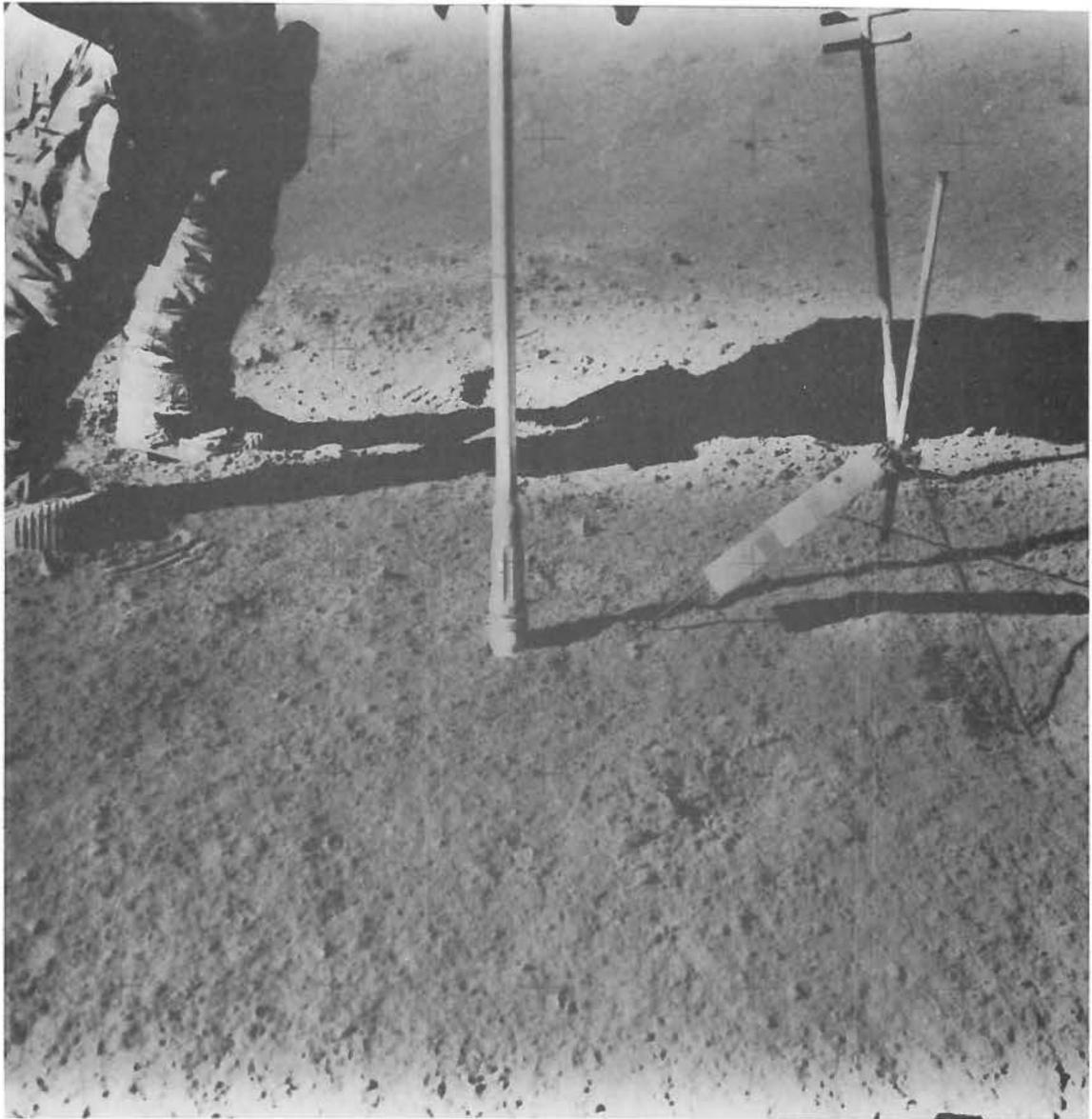


Figure 6. Sample 009. Post-driving, cross-sun photograph AS15-86-11659, looking south.

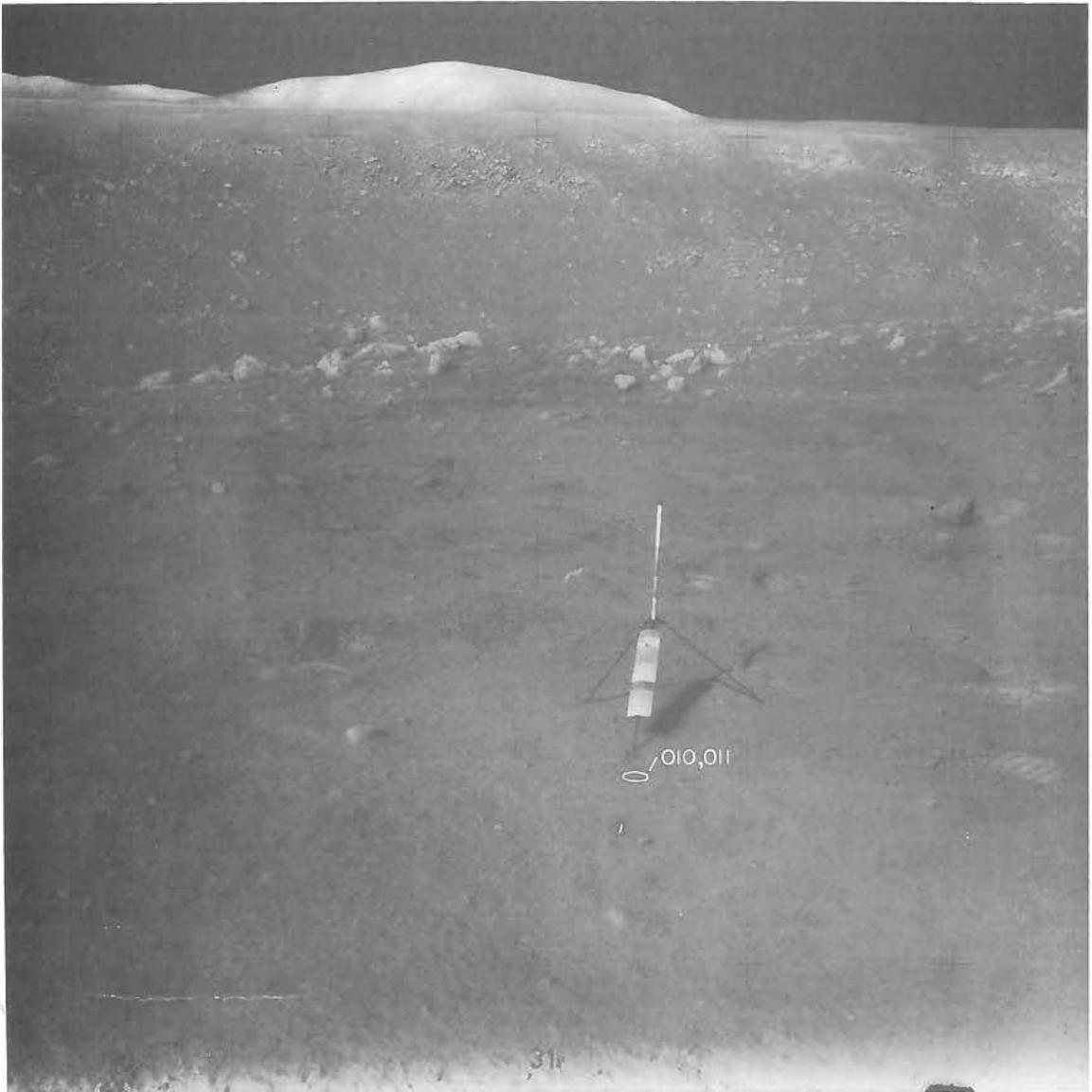


Figure 7. Area of samples 010 and 011 collected in a double core (011 over 010) at station 9a. Pre-sampling, down-sun photograph AS15-82-11159, looking west.



*Figure 8. Samples 010 and 011. Post-driving, cross-sun photograph AS15-82-11162, looking north.*



Figure 9. Samples 012, 260-264 collected at station 6 from base of Hadley delta. Pre-sampling, down-sun photograph AS15-85-11526, looking west.

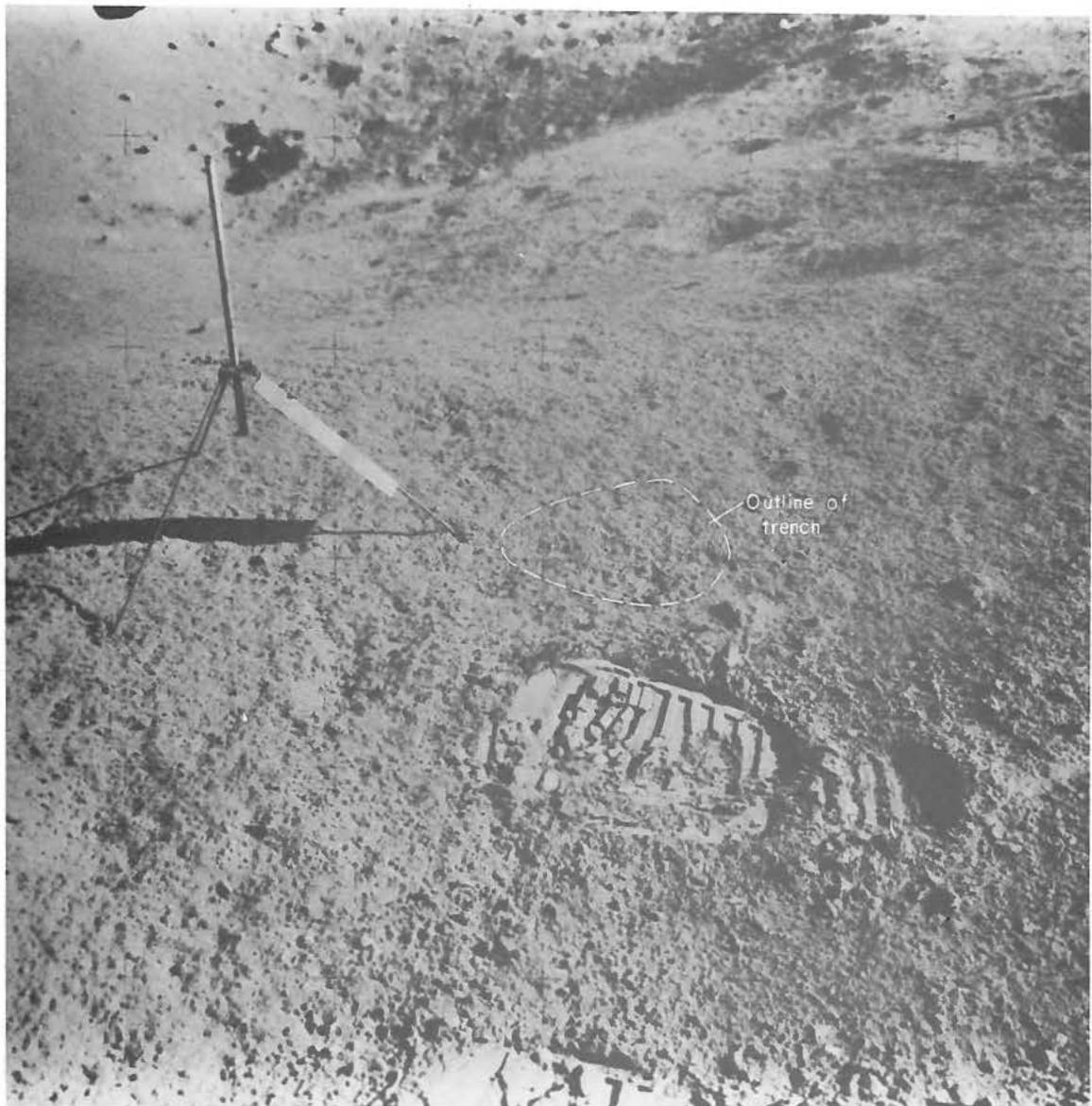
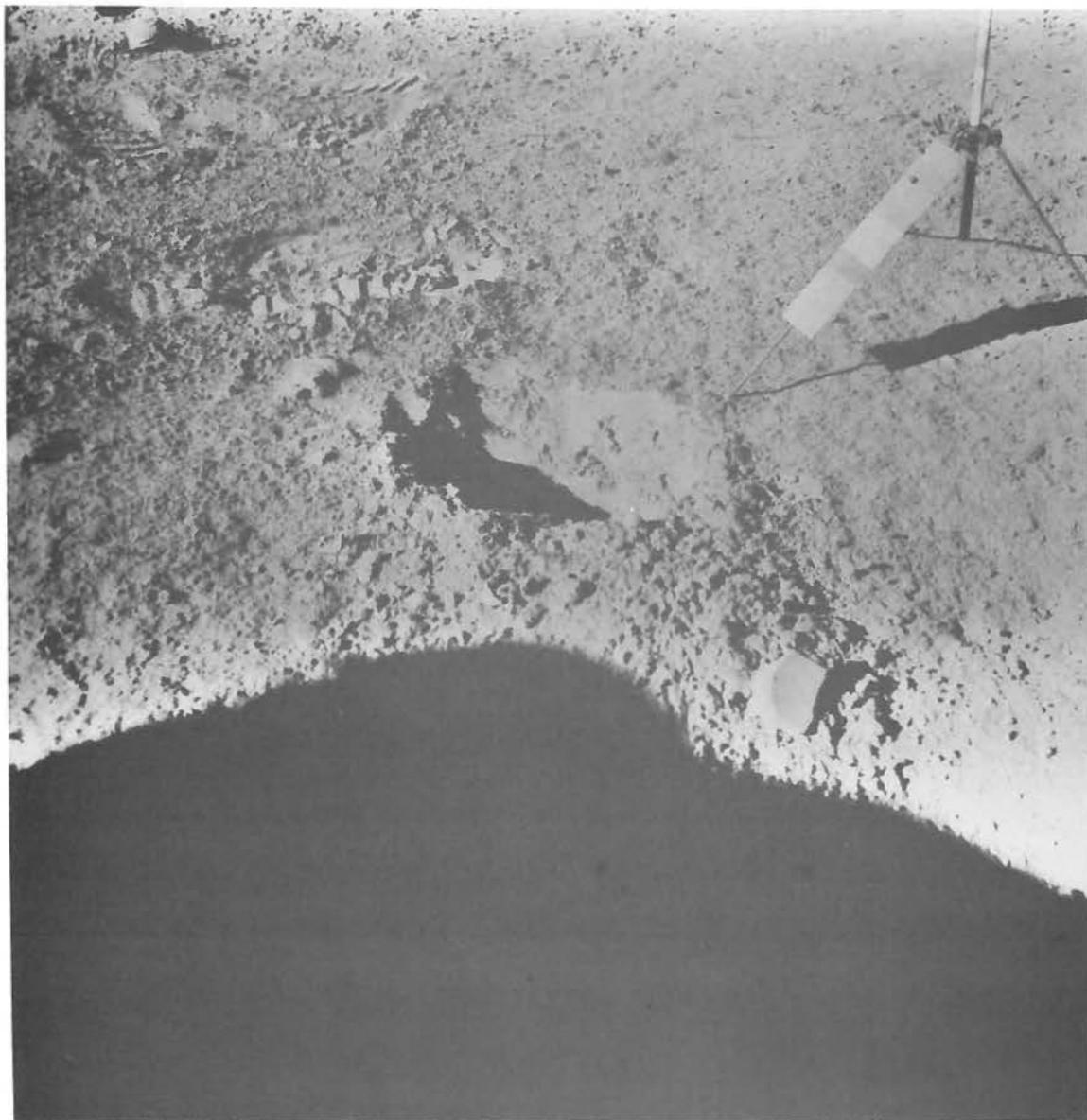


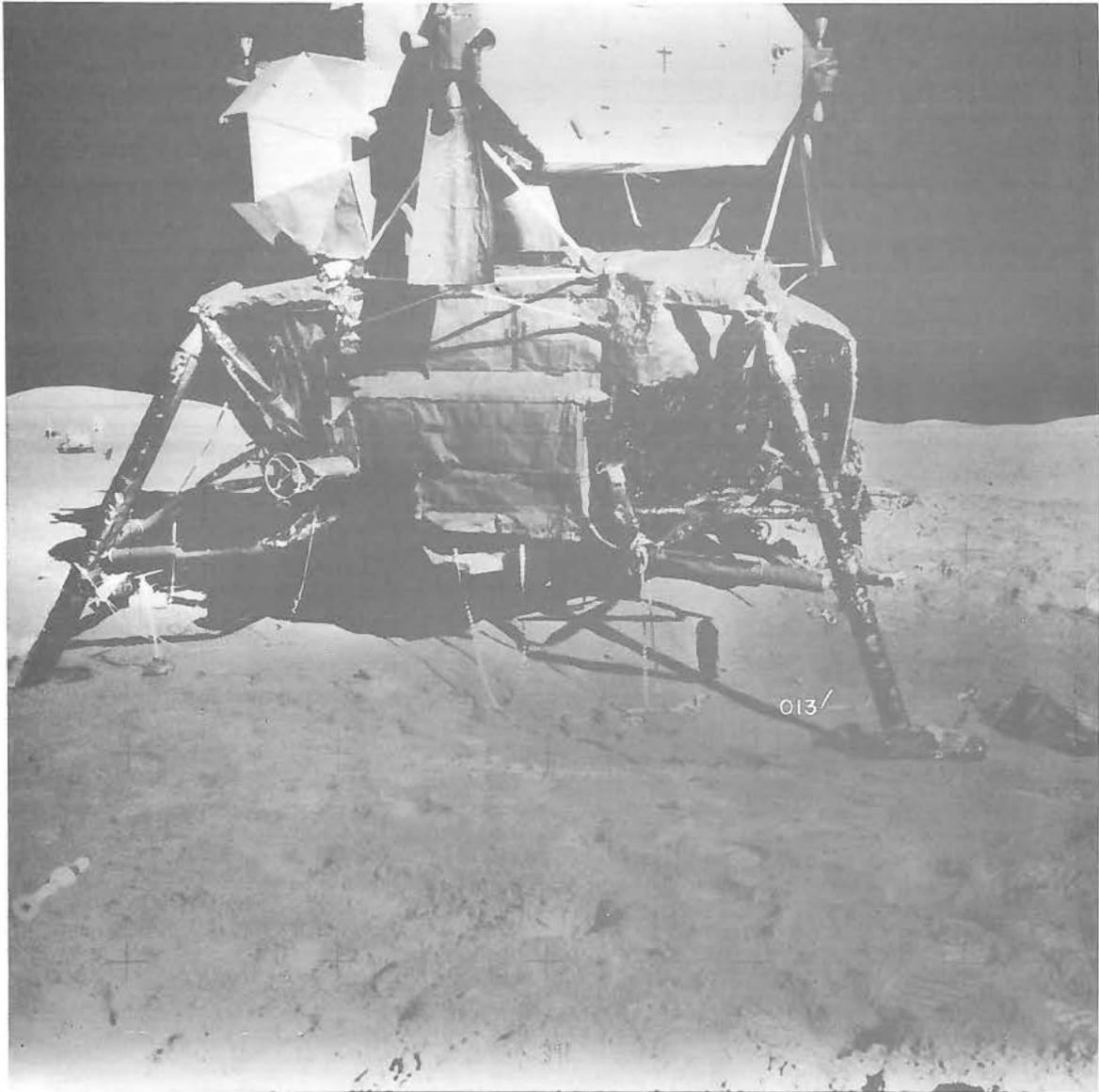
Figure 10. Area of samples 012, 260-264 collected at station 6 from base of Hadley delta. Pre-sampling, cross-sun photograph AS15-86-11641, looking north.



Figure 11. Samples 012, 260-264. Post-sampling, cross-sun photograph AS15-86-11645, looking north.



*Figure 12. Sample 012, 260-264. Post-sampling, cross-sun photograph AS15-86-11643, looking south.*



*Figure 13. Sample 013 collected at the LM. Pre-sampling, cross-sun photograph AS15-88-11939, looking northwest.*

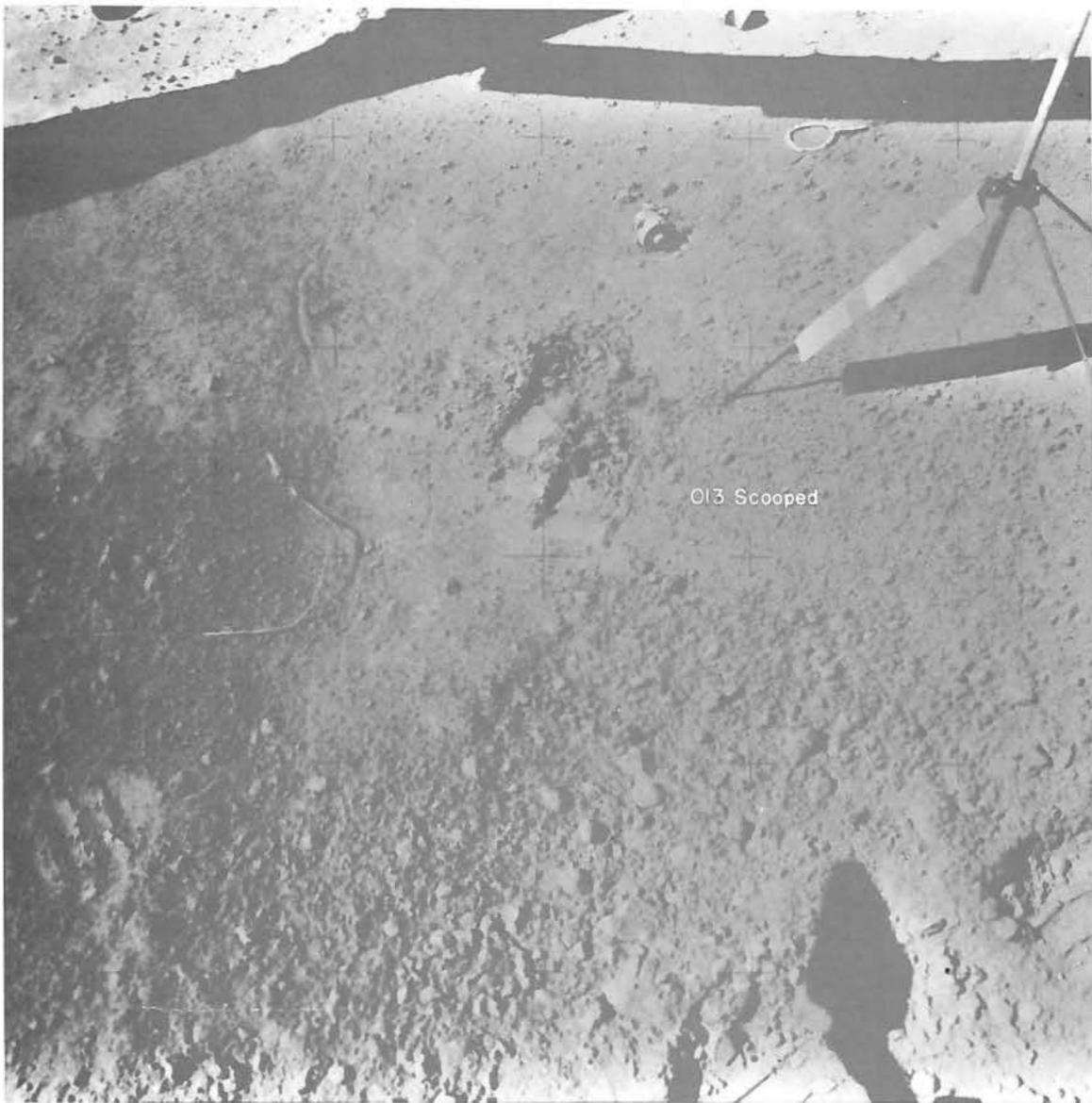


Figure 14. Sample 013. Post-sampling, cross-sun photograph AS15-88-11887, looking south.

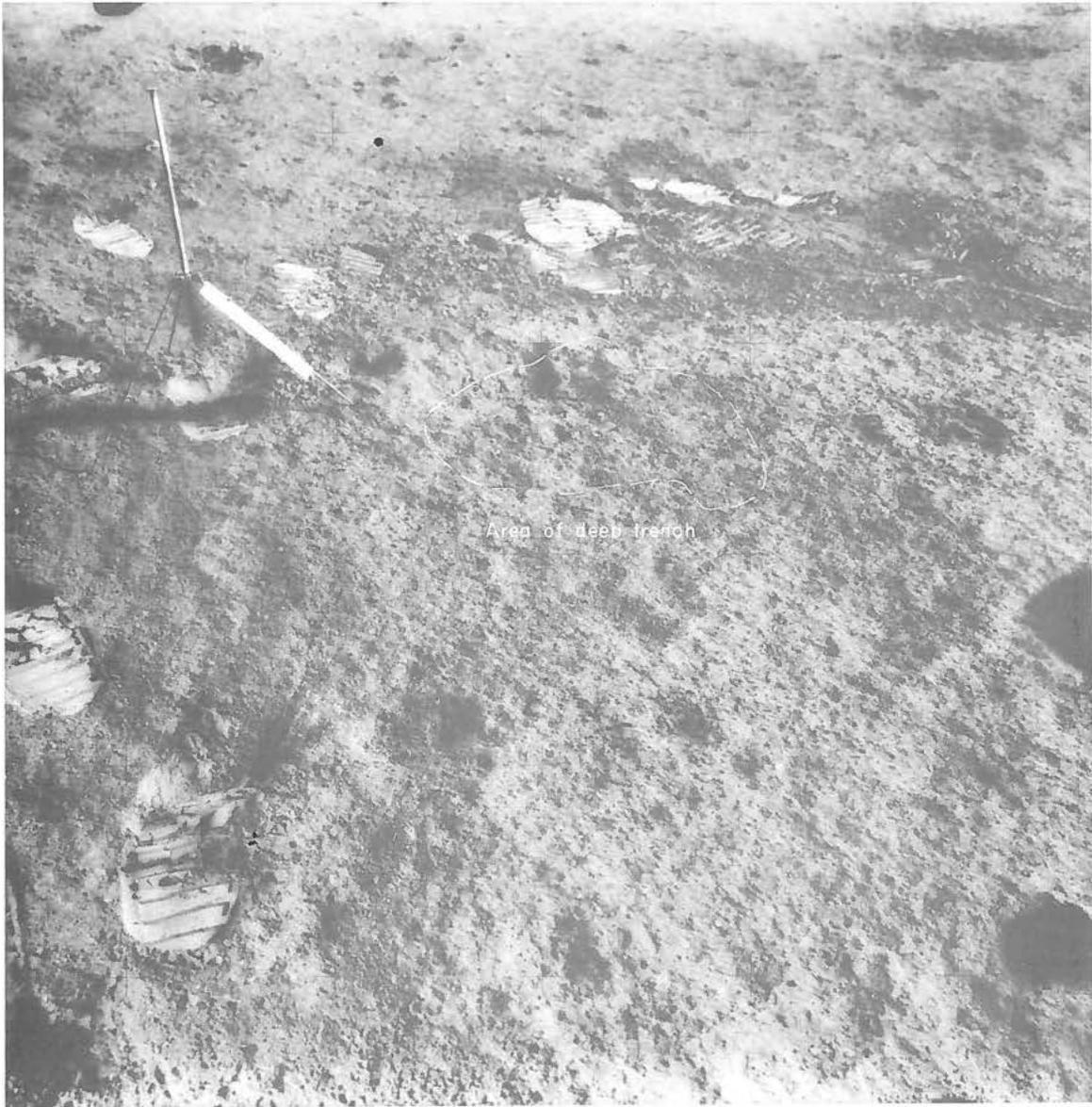


Figure 15. Area of samples 014, 030-034 and 040-044 collected at station 8 from the deep trench. Pre-sampling, cross-sun photograph AS15-92-12417, looking north.



Figure 16. Samples 014, 030-034, 040-044. Post-sampling, cross-sun photograph AS15-92-12439, looking south.



Figure 17. Sample 015 collected at the LM. Pre-sampling, down-sun photograph AS15-85-11386, looking west.

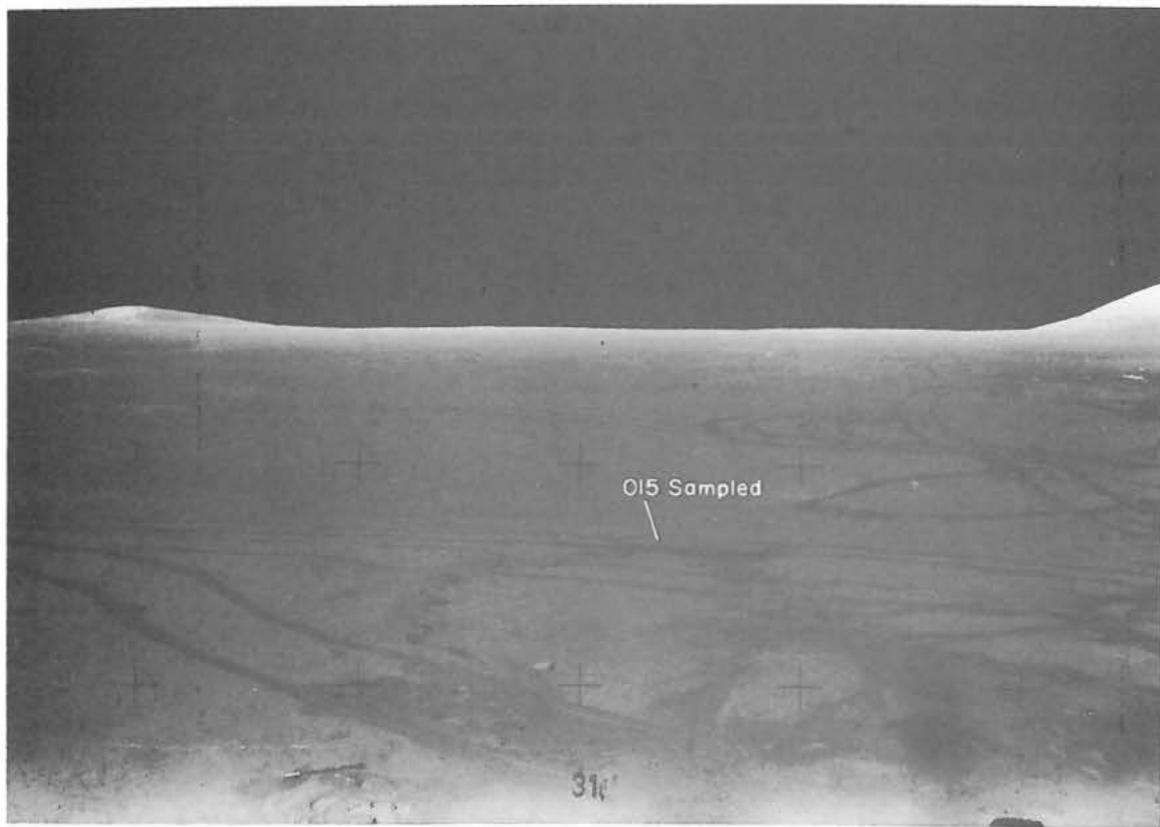


Figure 18. Sample 015. Post-sampling, down-sun photograph AS15-88-11932, looking west.

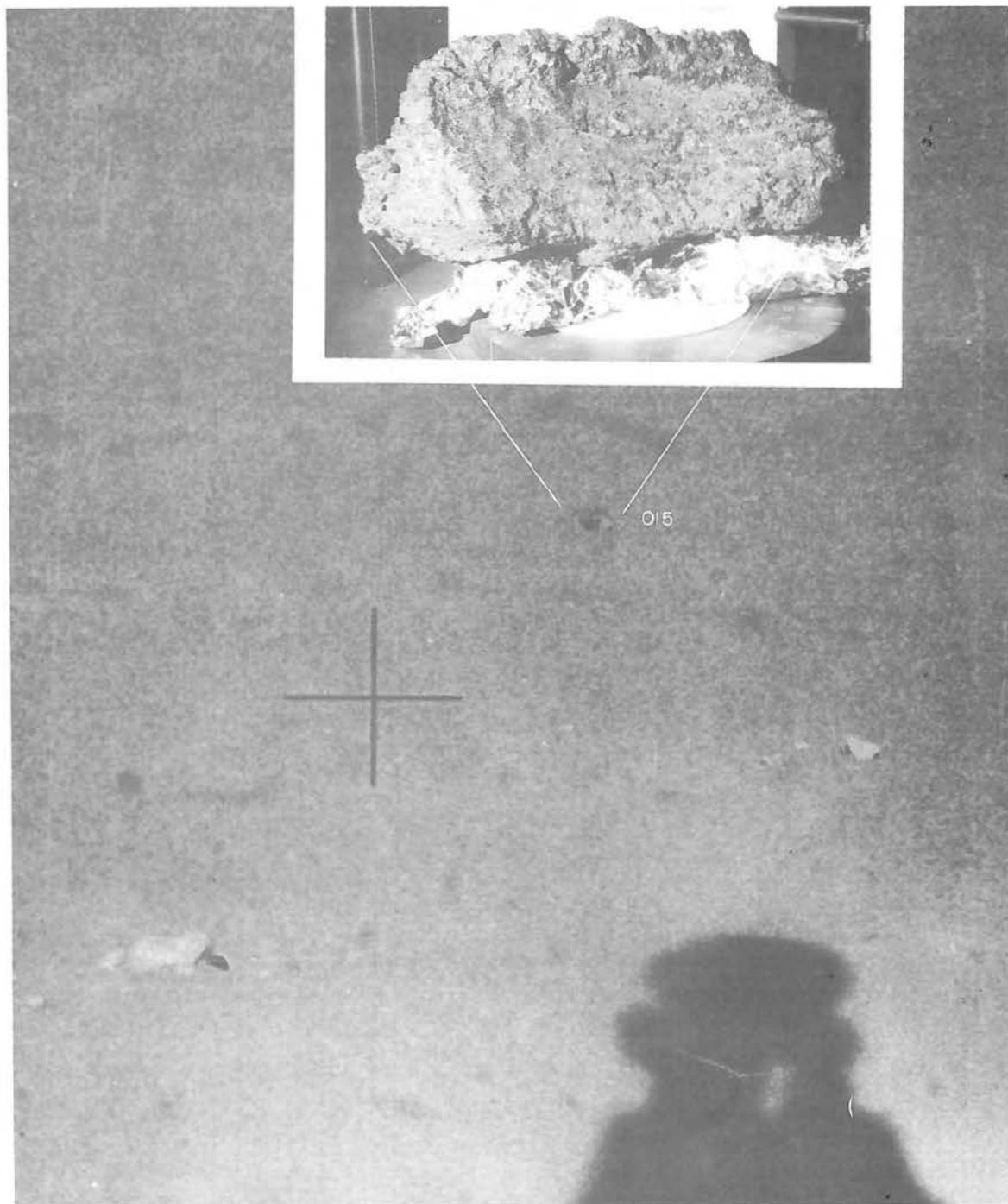


Figure 19. Sample 015 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-88-11385, taken down-sun, looking west.

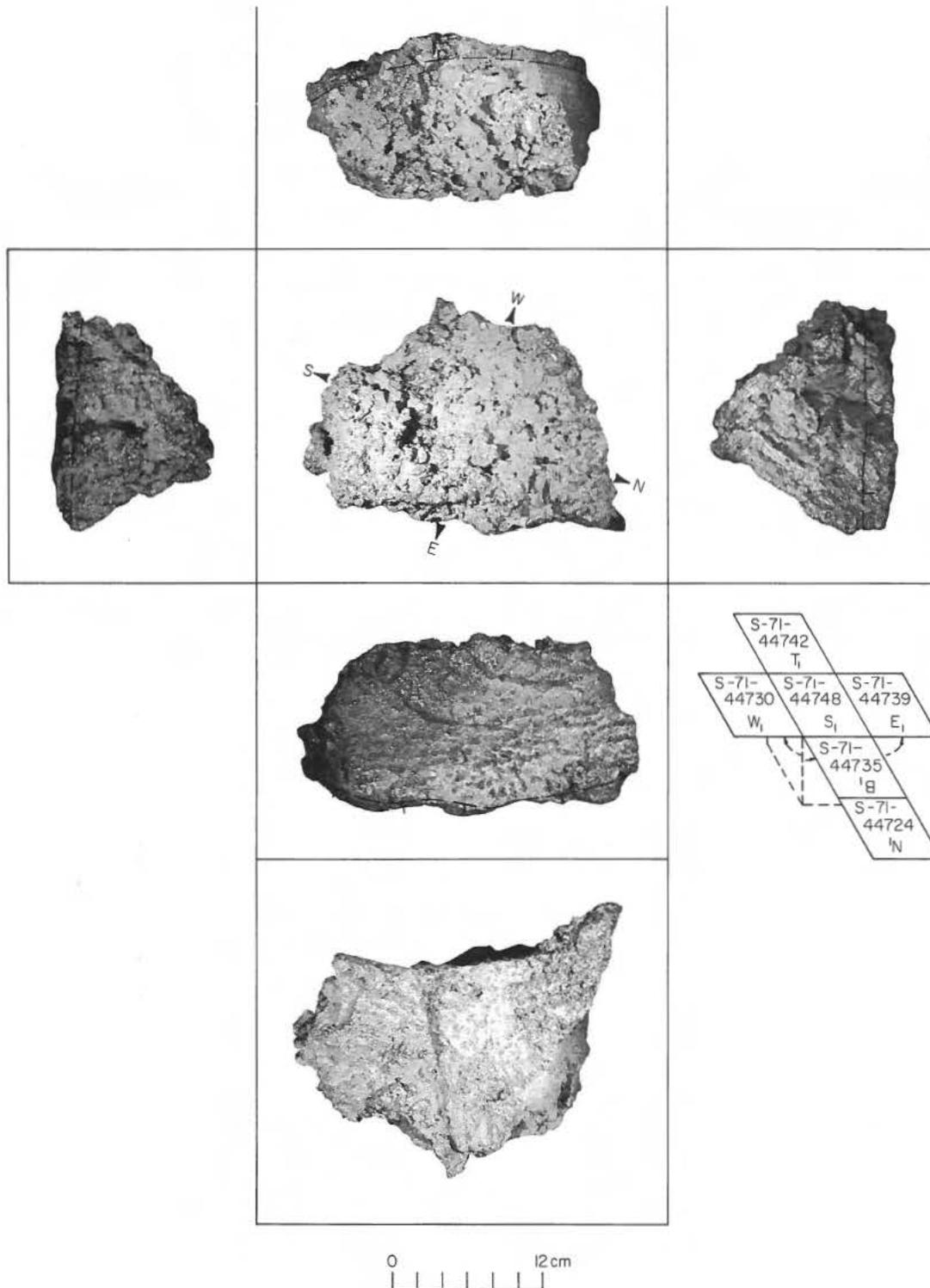


Figure 20. Orthogonal views of sample number 015.

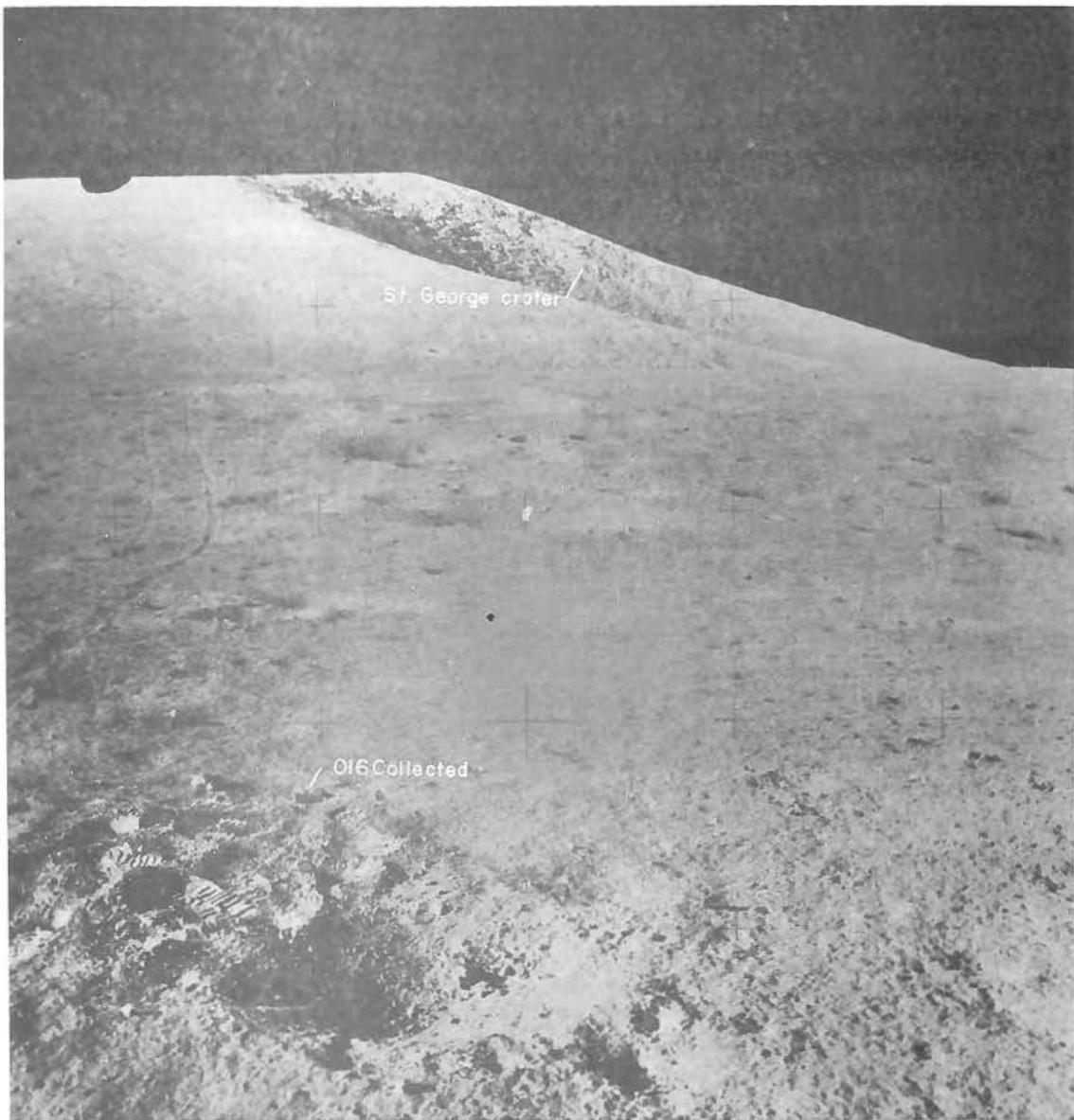


Figure 21. Area from which sample 016 was collected at station 3. Post-sampling, cross-sun photograph AS15-86-11584, looking southwest.

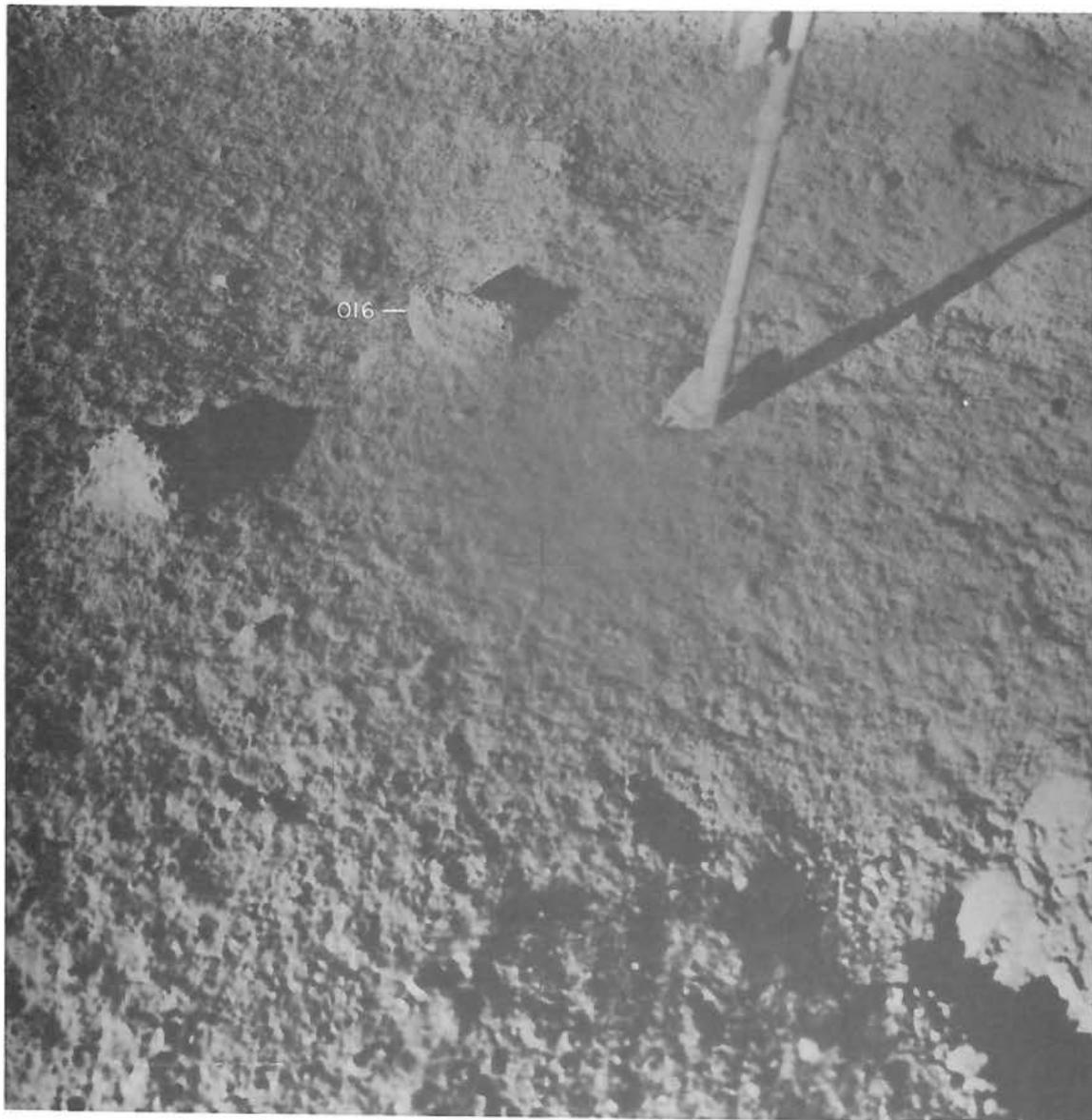


Figure 22. Sample 016 collected at station 3. Pre-sampling, cross-sun photograph AS15-86-11581, looking southwest

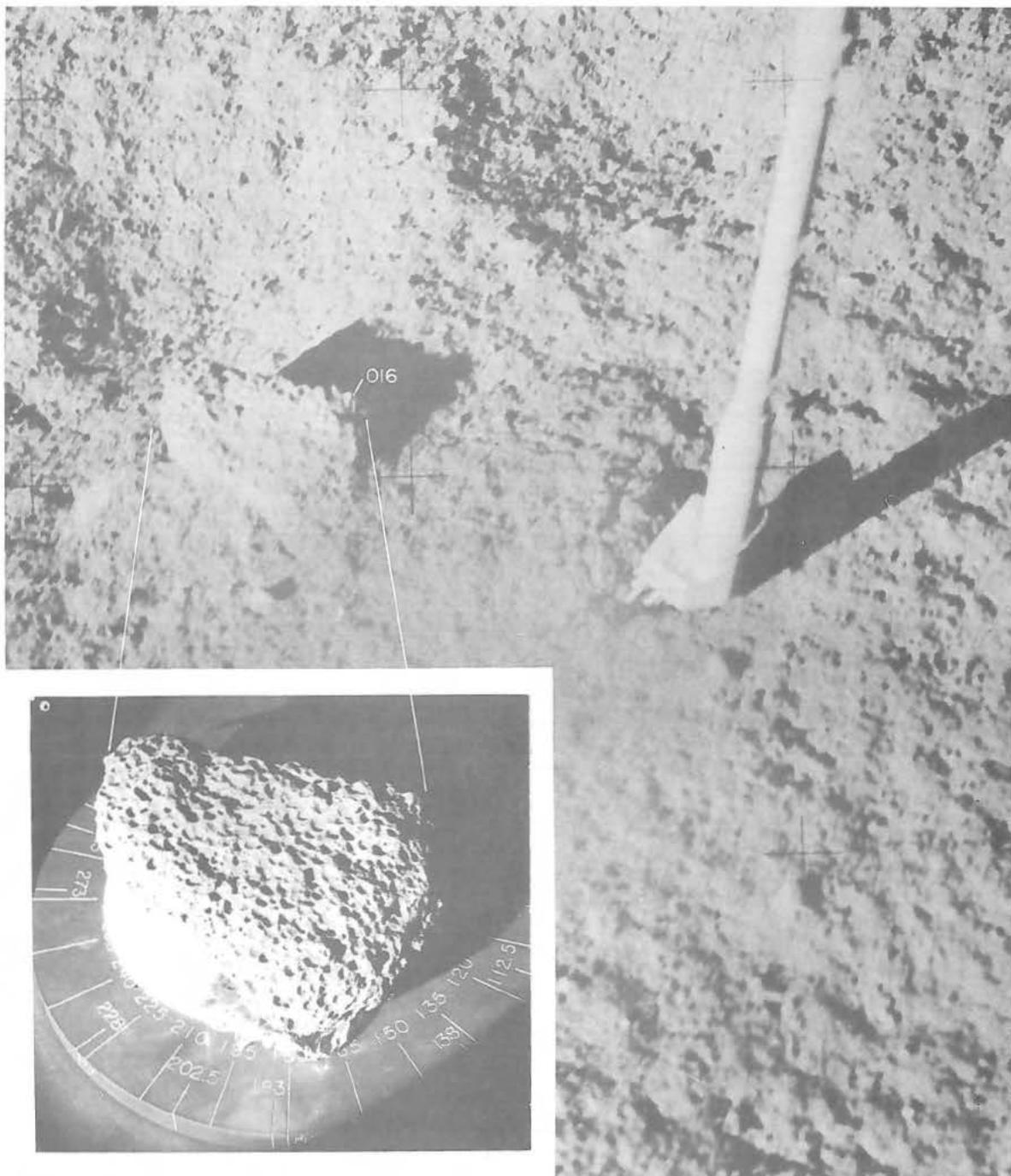


Figure 23. Sample 016 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11581, taken cross-sun, looking southwest.

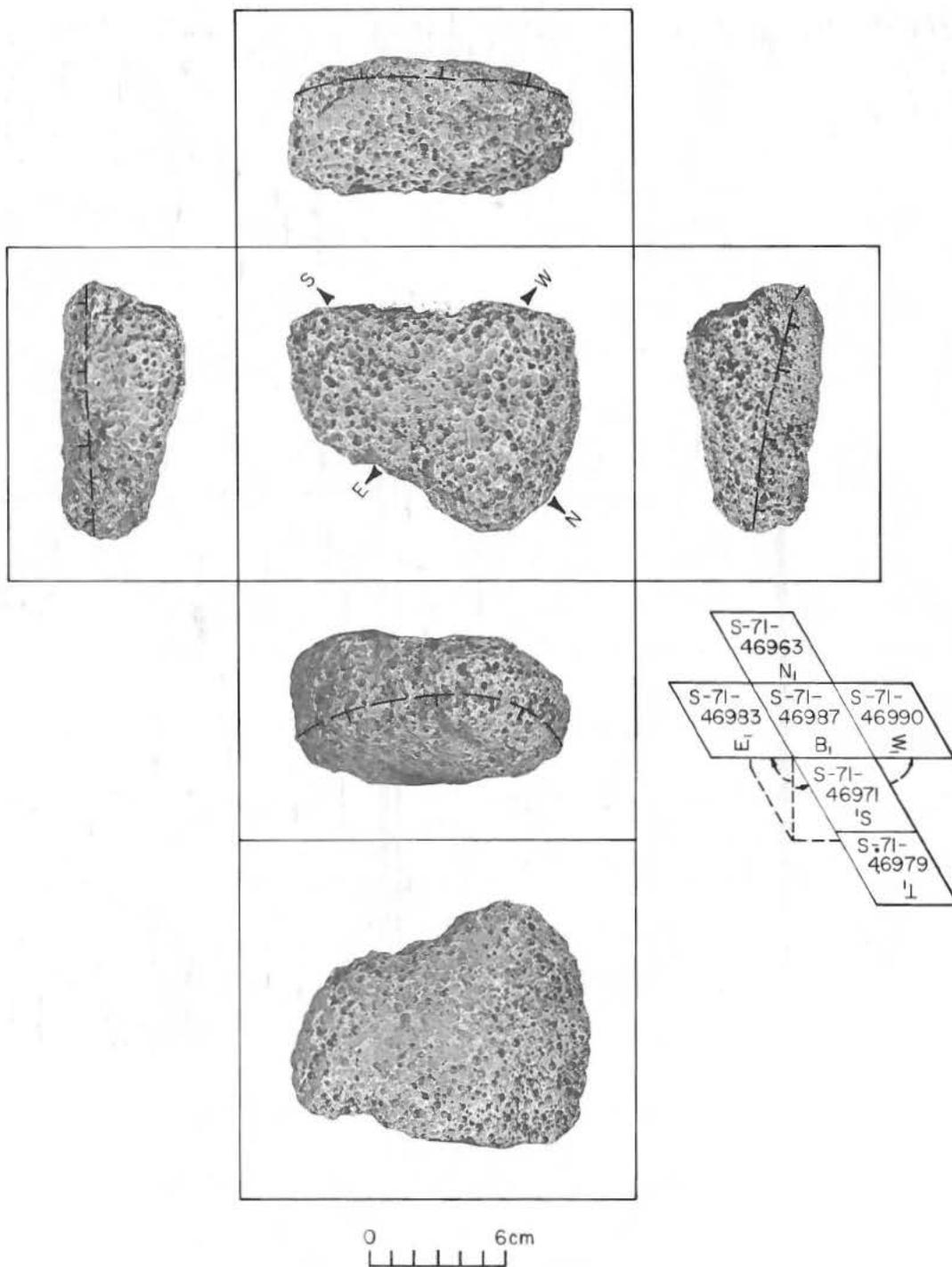


Figure 24. Orthogonal views of sample number 016.



Figure 25. Samples 017-019, 027 and 028 collected at the LM. Pre-sampling, cross-sun photograph AS15-85-11385, looking west.



Figure 26. Samples 017-019, 027 and 028. Pre-sampling, cross-sun photograph AS15-86-11604, looking south.

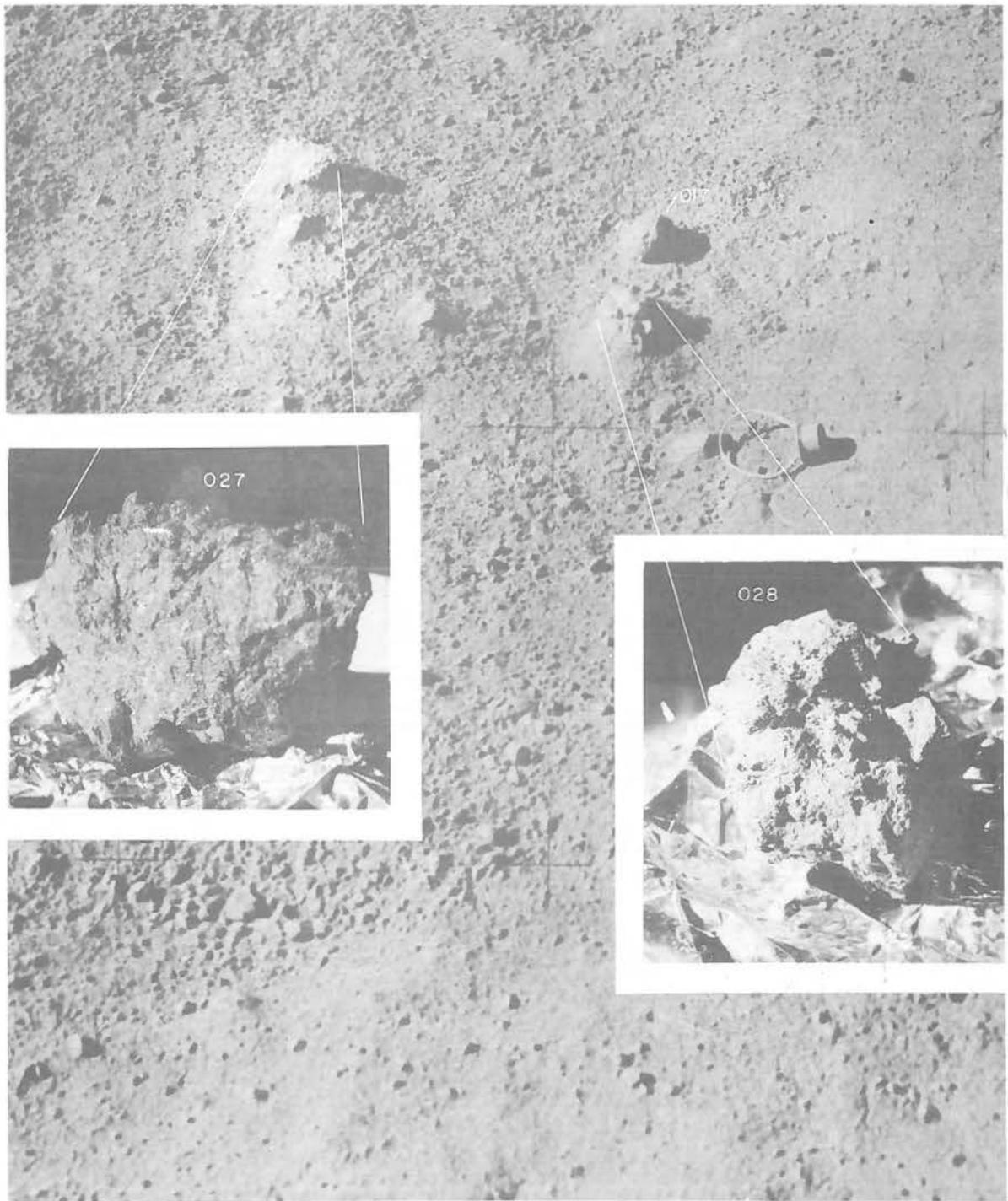


Figure 27. Samples 027 and 028 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11604, taken cross-sun, looking south.

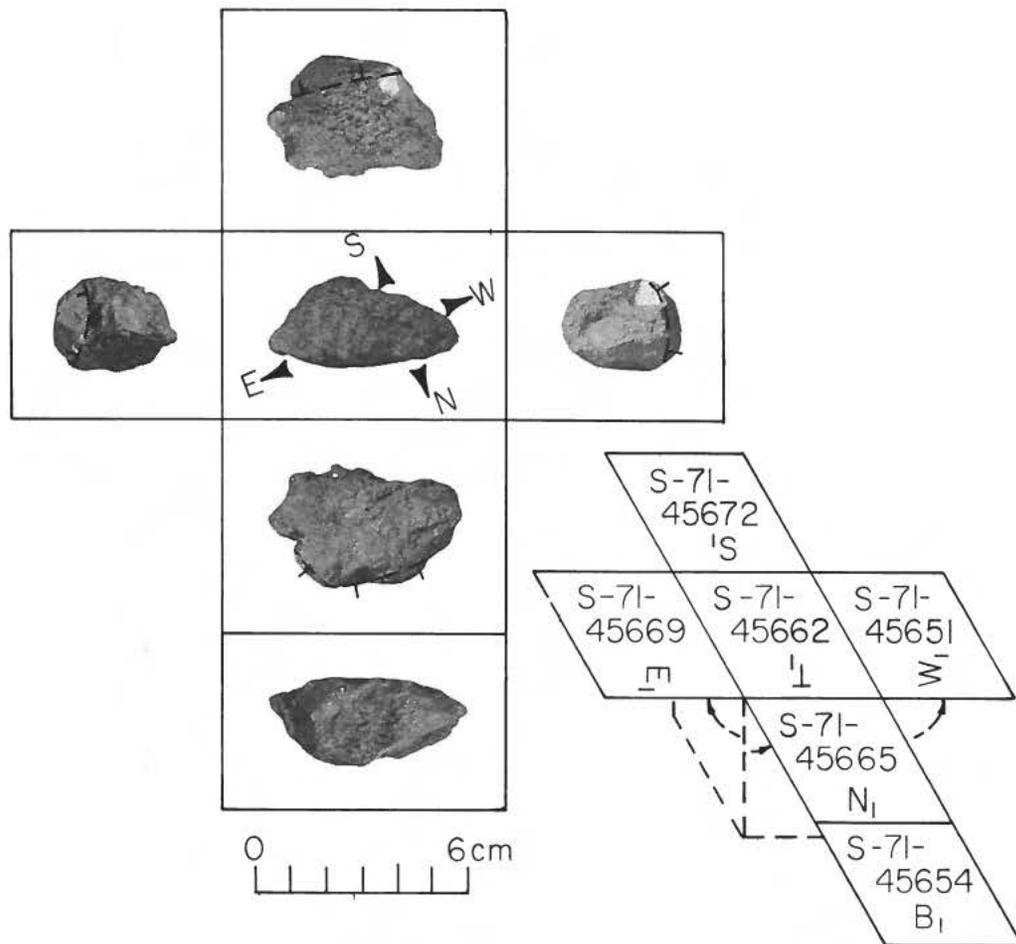


Figure 28. Orthogonal views of sample number 027.



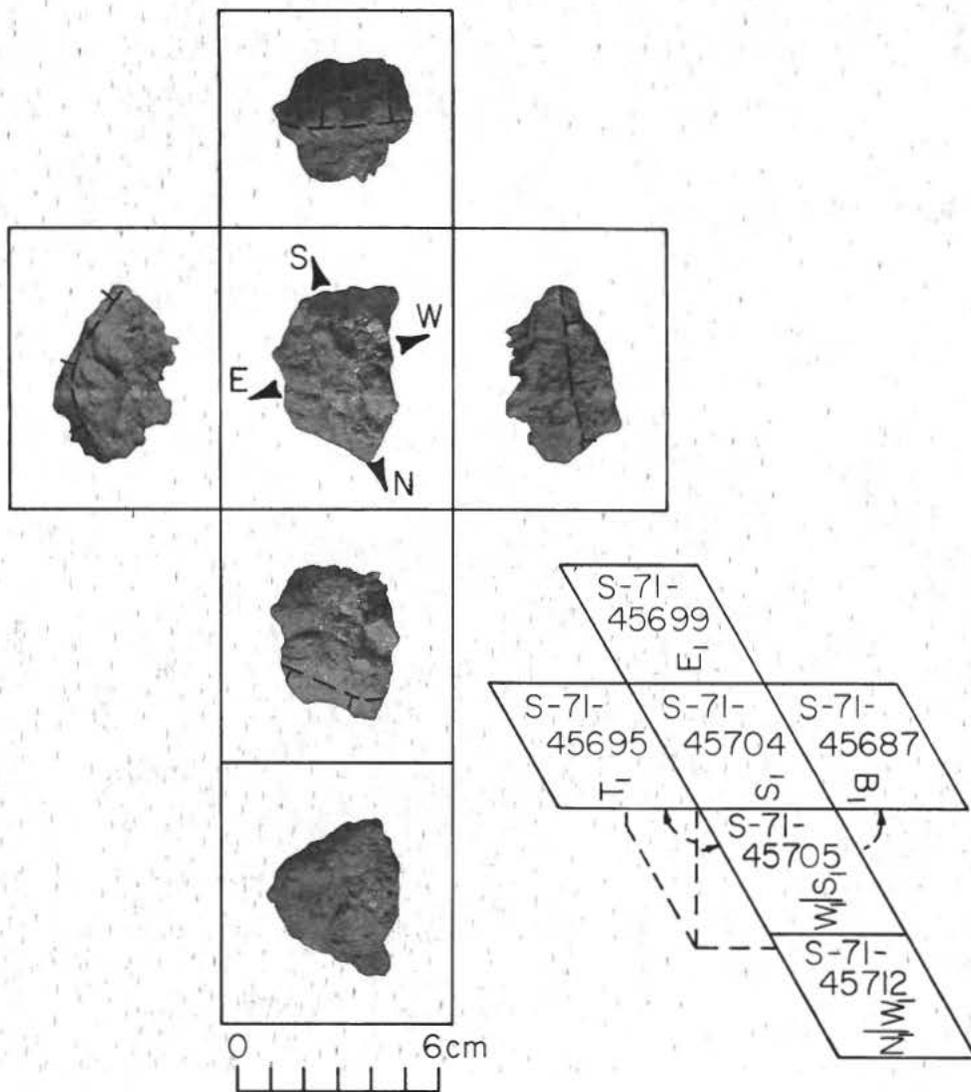


Figure 29. Orthogonal views of sample number 028.

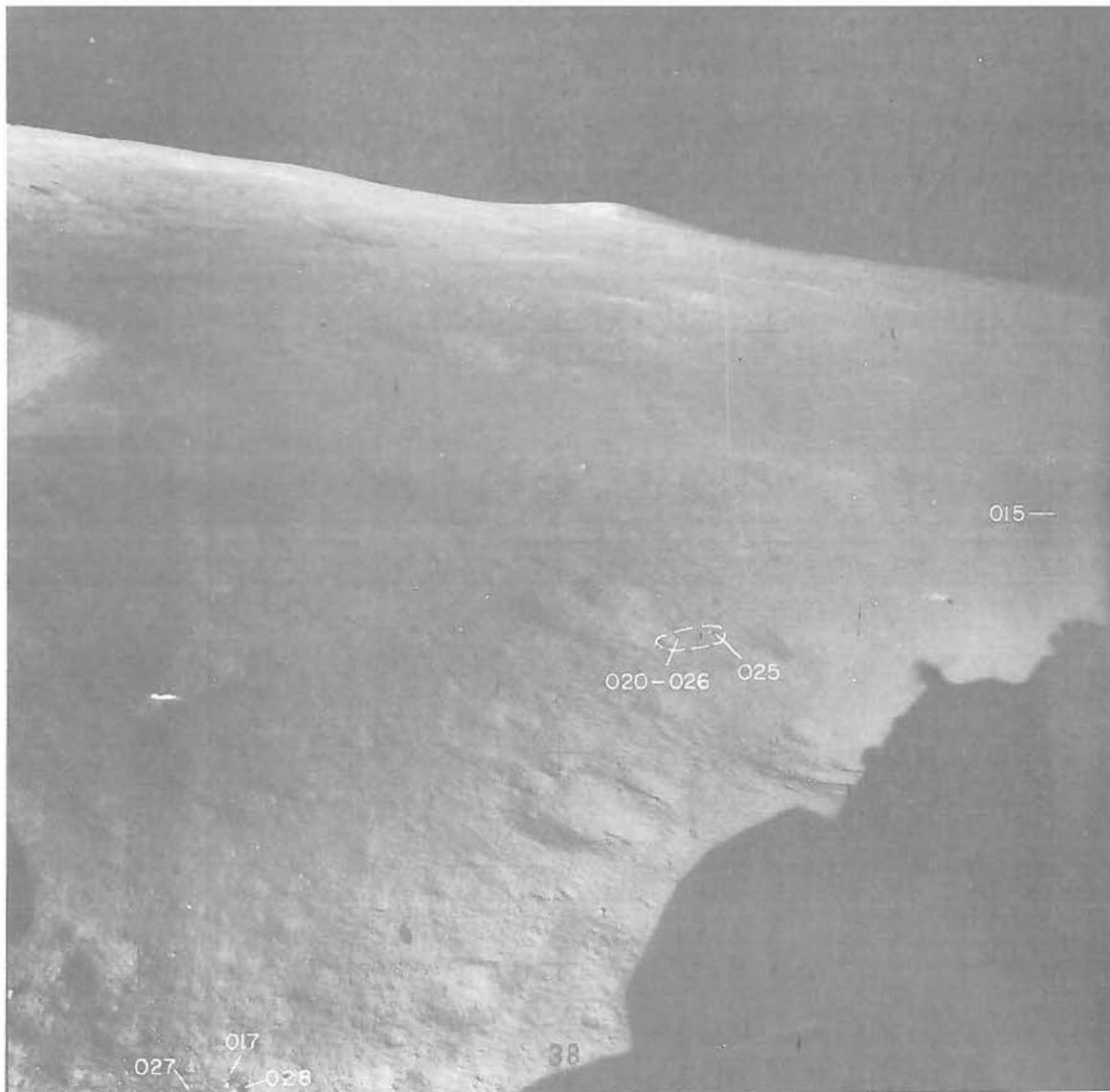


Figure 30. Samples 020-026 collected at the LM as the contingency sample. Pre-sampling, cross-sun photograph AS15-85-11385, looking west.

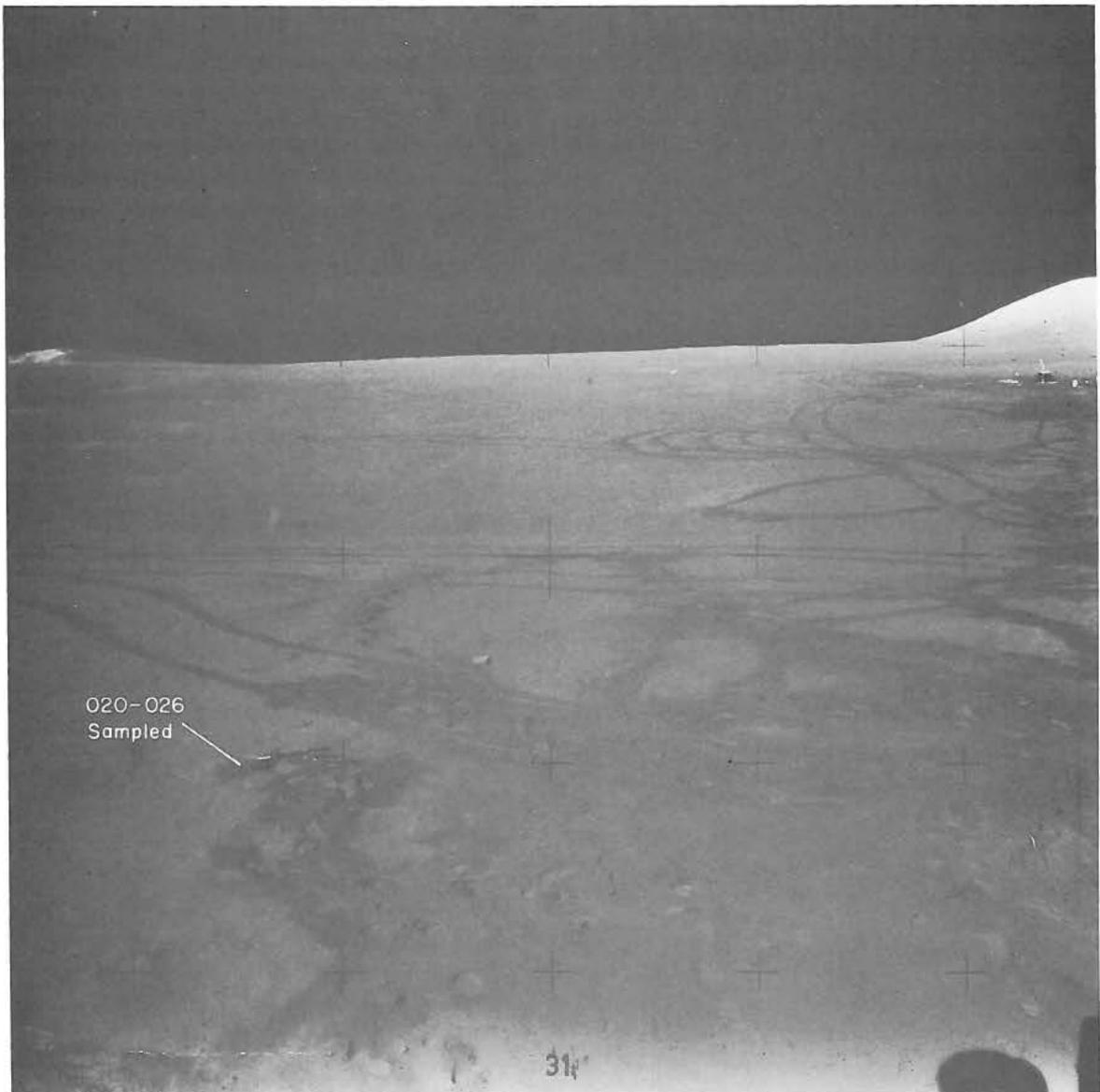


Figure 31. Samples 020-026. Post-sampling, down-sun photograph AS15-88-11943, looking west.



Figure 32. Sample 058 collected at the ALSEP site. Pre-sampling down-sun photograph AS15-92-12412, looking west.



Figure 33. Sample 058. Pre-sampling, cross-sun photograph AS15-92-12410, looking south.





Figure 34. Sample 058 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-92-12410, taken cross-sun, looking south.

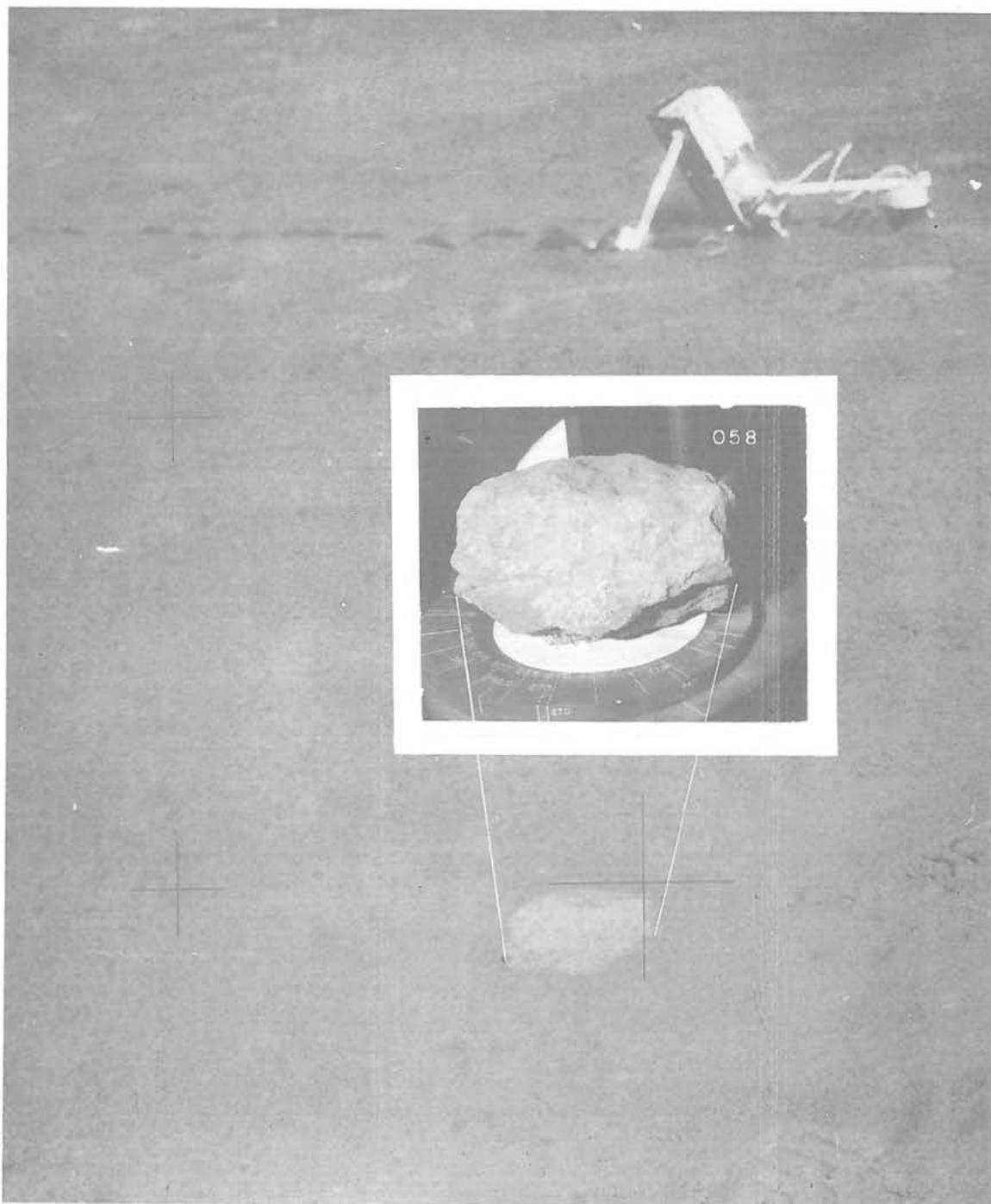


Figure 35. Sample 058 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-92-12412, taken down-sun, looking west.

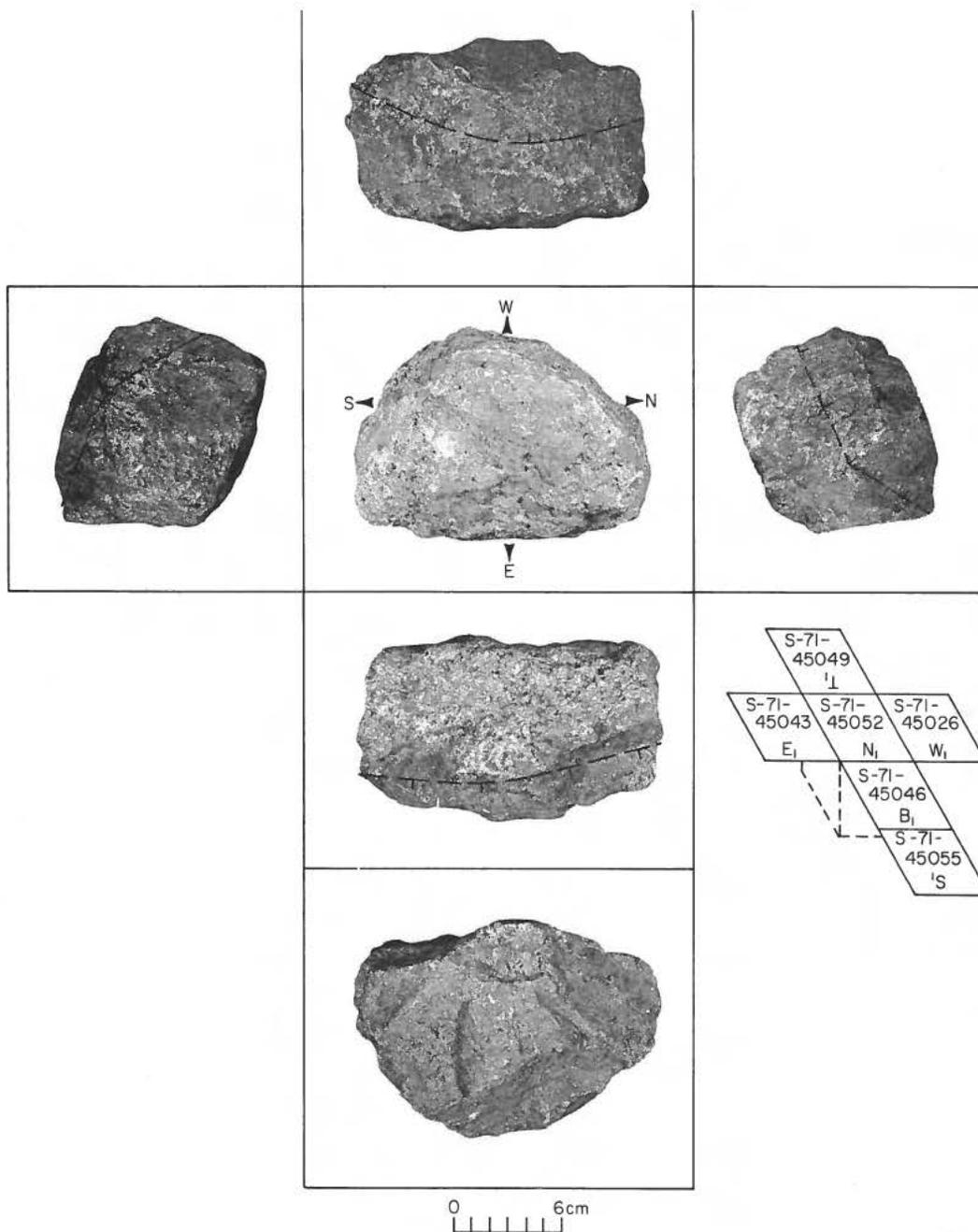


Figure 36. Orthogonal views of sample number 058.



*Figure 37. Sample 059 collected at the ALSEP site. Pre-sampling, down-sun photograph AS15-92-12413, looking west.*



Figure 38. Sample 059. Pre-sampling, cross-sun photograph  
AS15-92-12415, looking north.

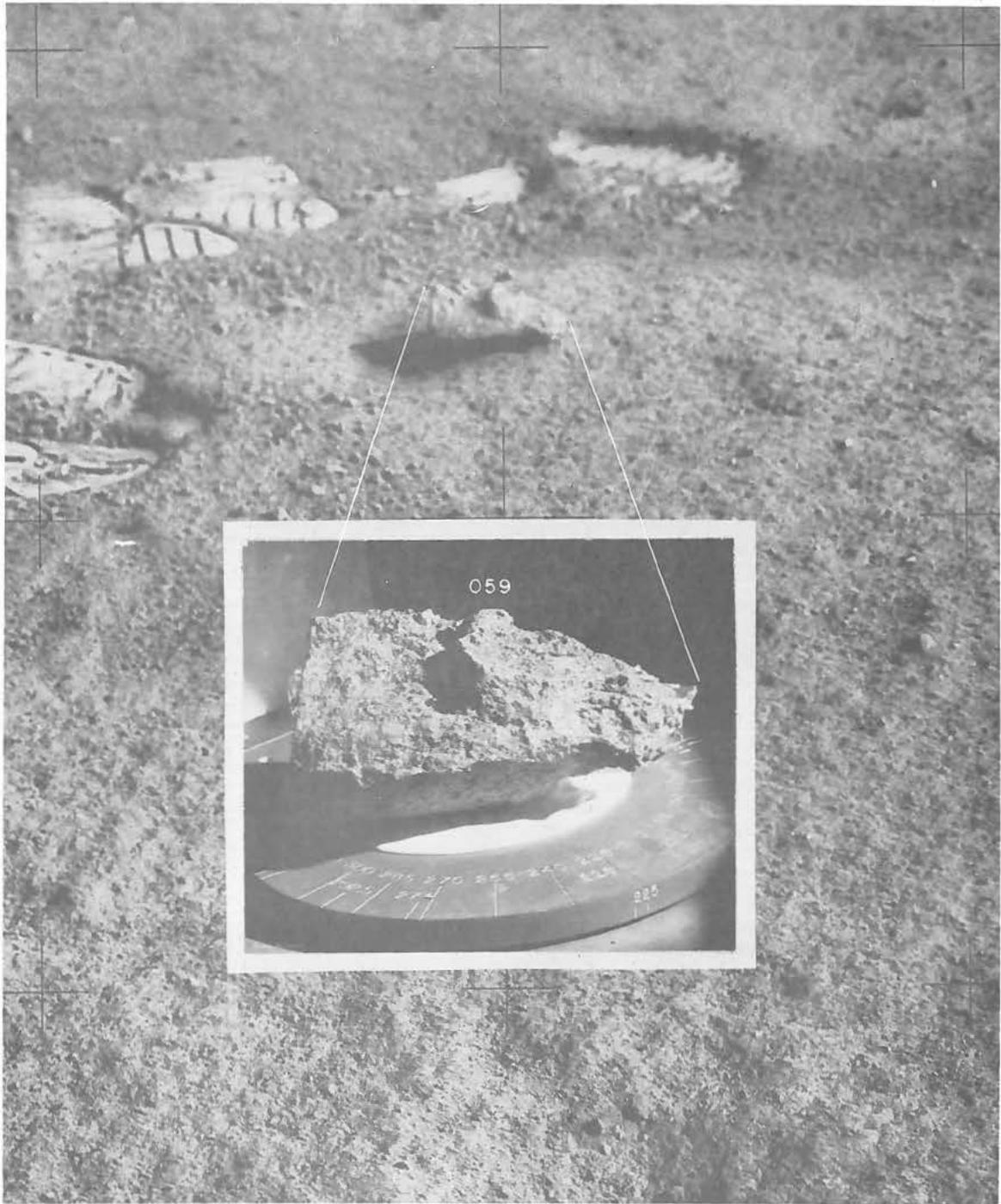


Figure 39. Sample 059 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-92-12415, taken cross-sun, looking north.

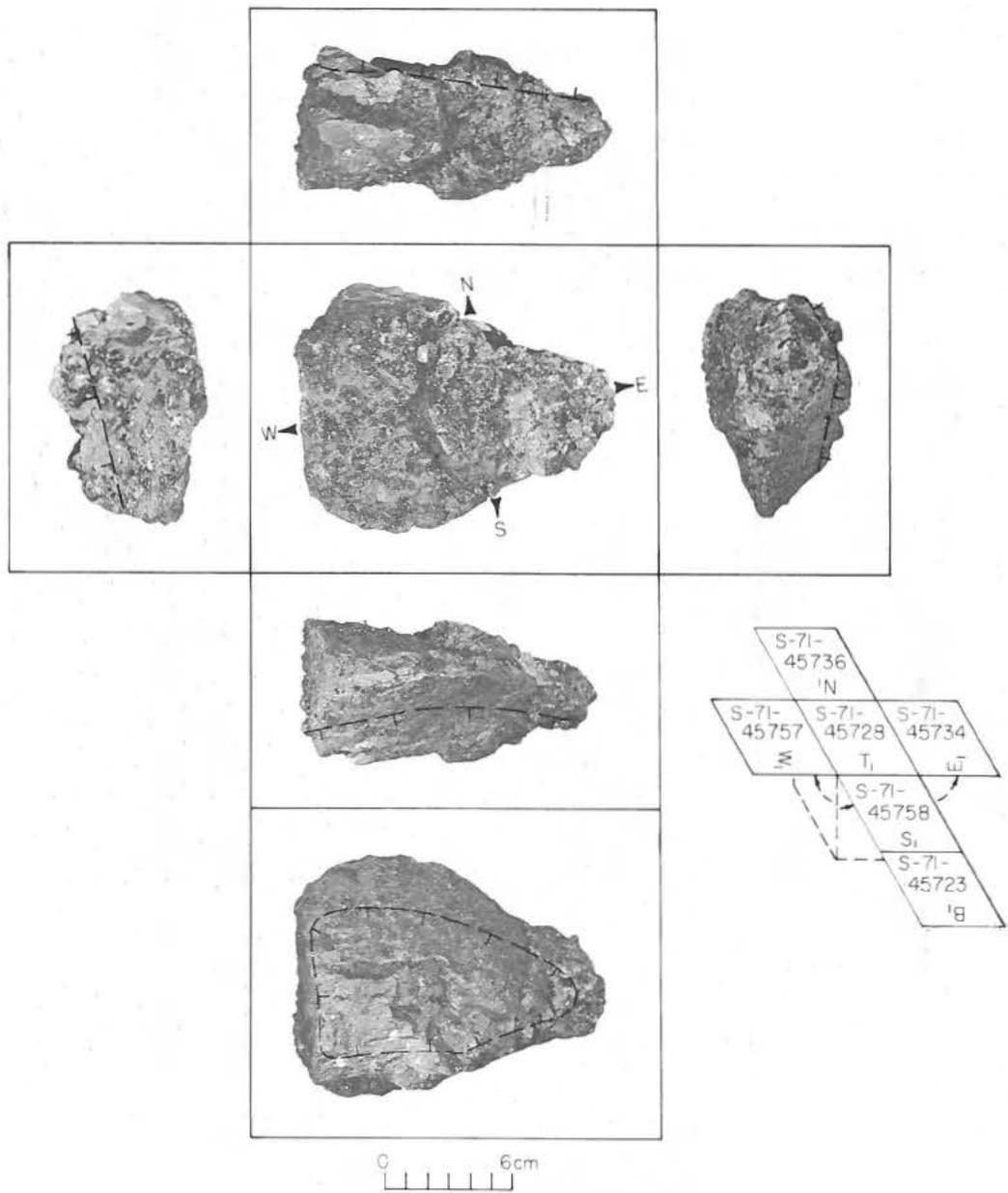


Figure 40. Orthogonal views of sample number 059.

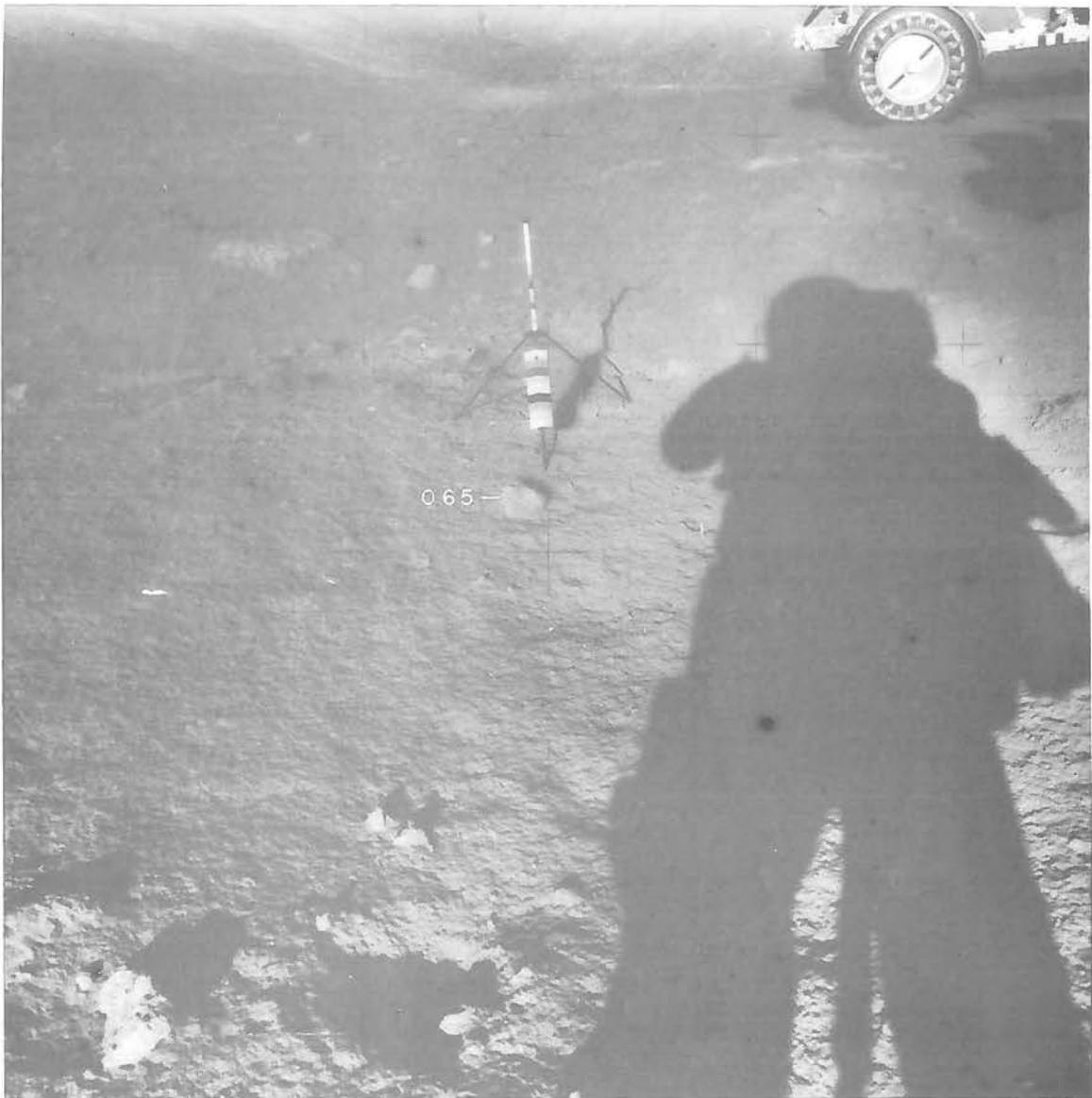


Figure 41. Sample 065 collected at station 1 from the east rim of Elbow crater. Pre-sampling, down-sun photograph AS15-85-11416, looking west.



Figure 42. Sample 065. Pre-sampling, cross-sun photograph AS15-86-11531, looking south.

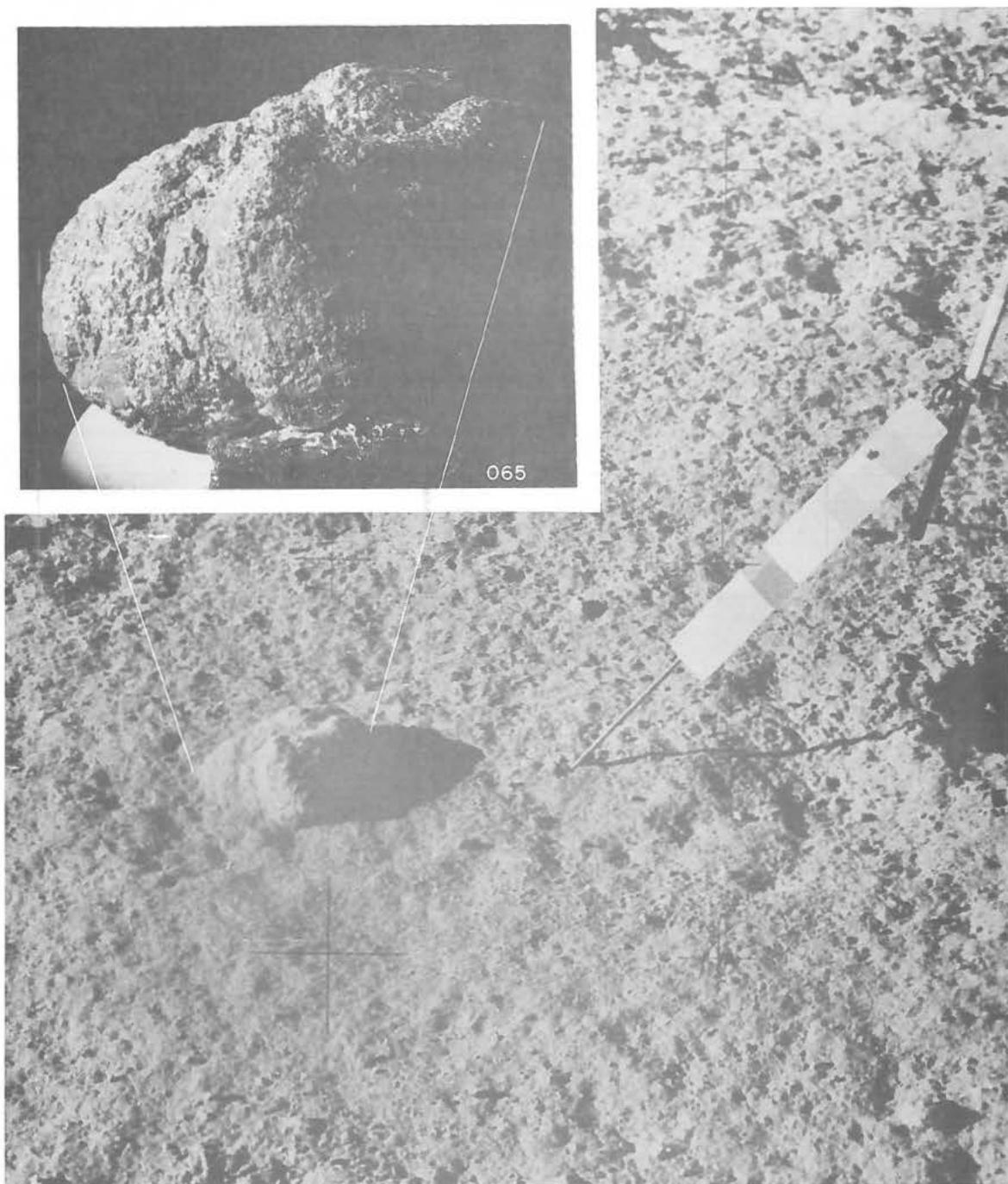


Figure 43. Sample 065 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11531, taken cross-sun, looking south.

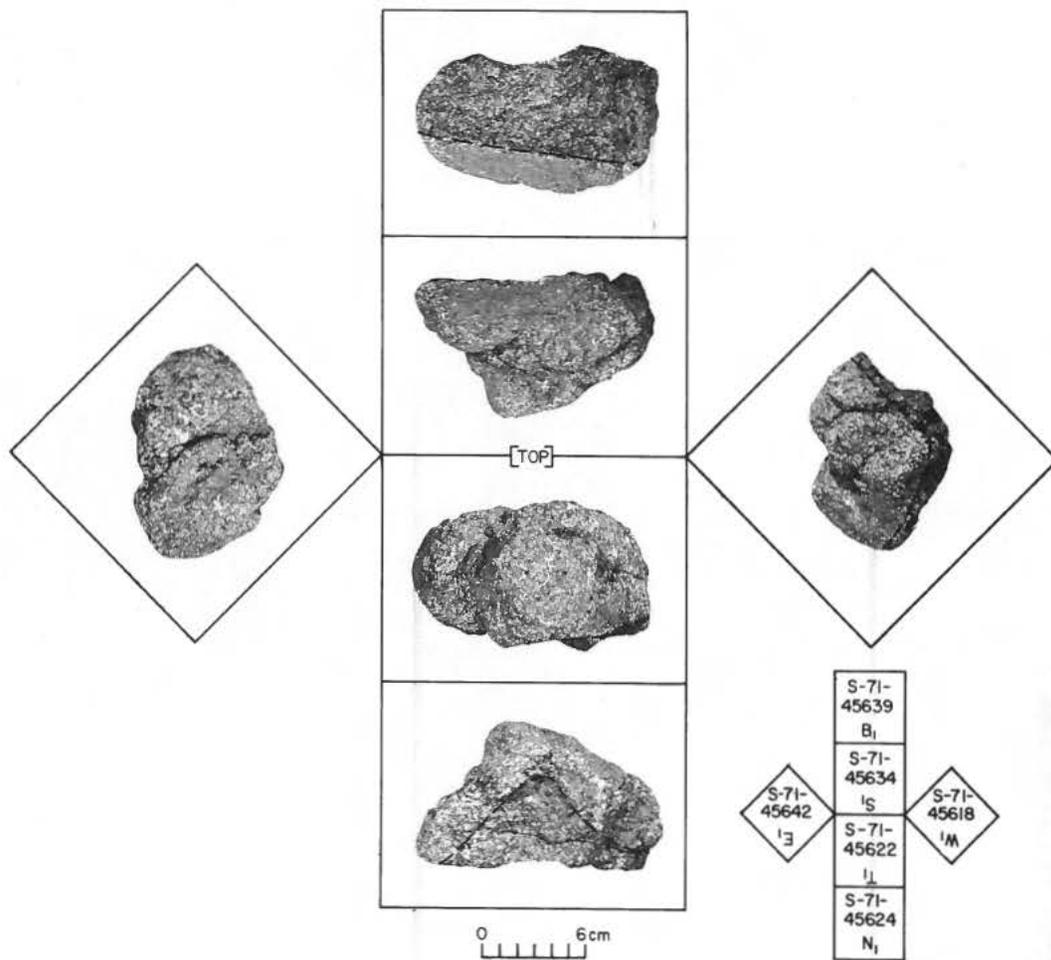


Figure 44. Orthogonal views of sample number 065.



Figure 45. Samples 070-076 collected at station 1 from the east rim of Elbow crater. Second sampling point in radial sample. Pre-sampling, down-sun photograph AS15-85-11418, looking west.

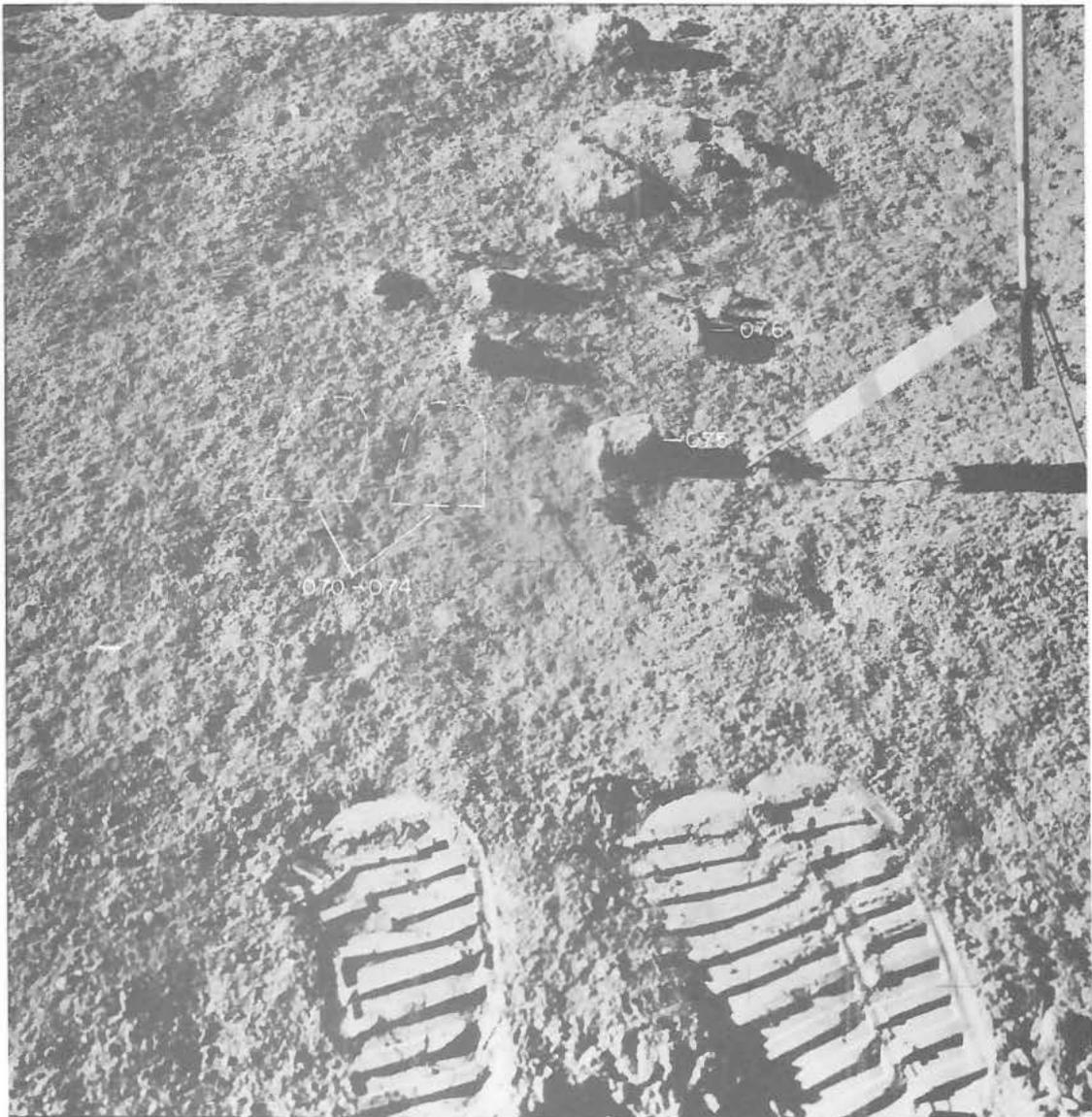


Figure 46. Samples 070-076. Pre-sampling, cross-sun photograph AS15-86-11534, looking south.

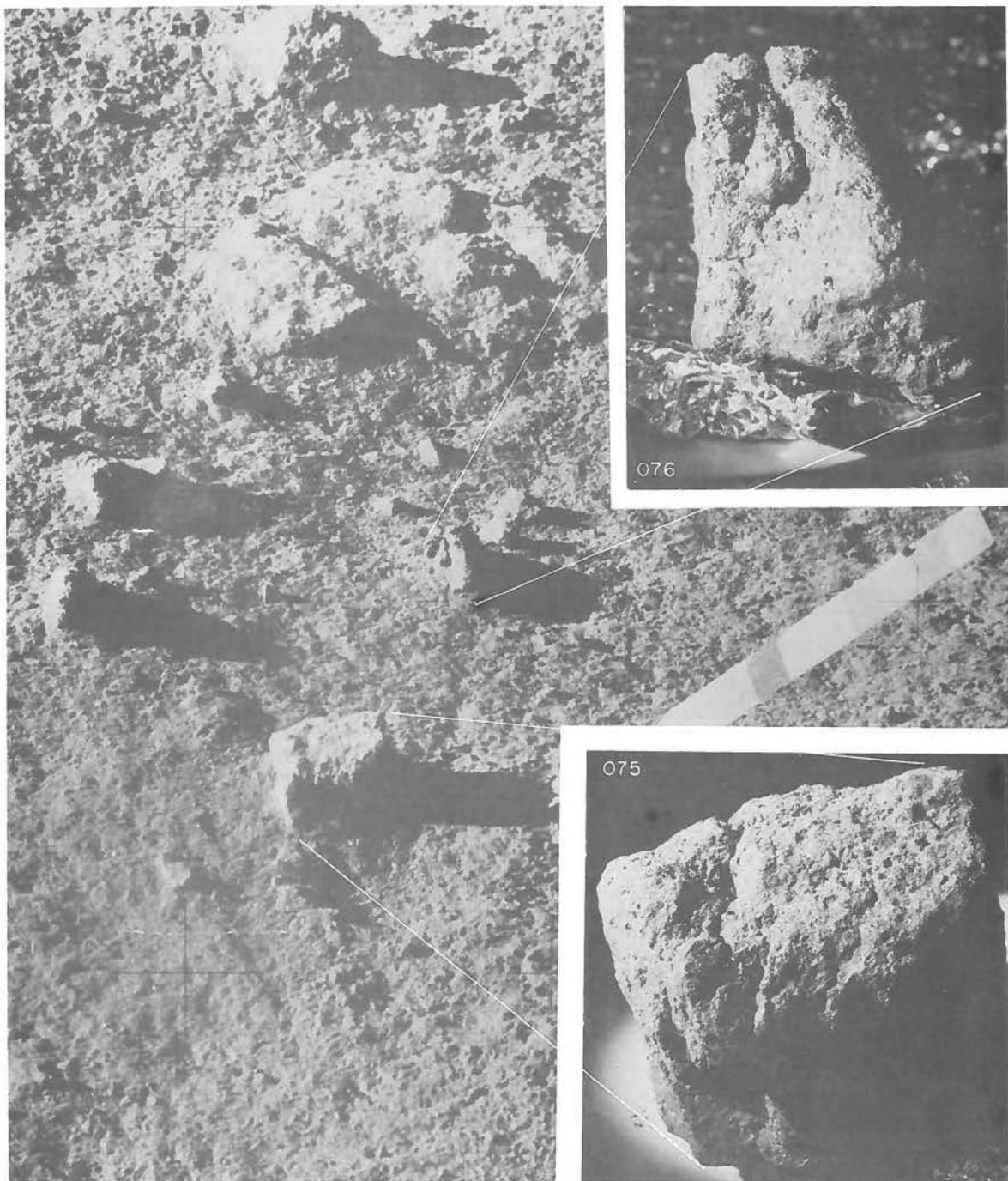


Figure 47. Samples 075 and 076 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11534, taken cross-sun, looking south.

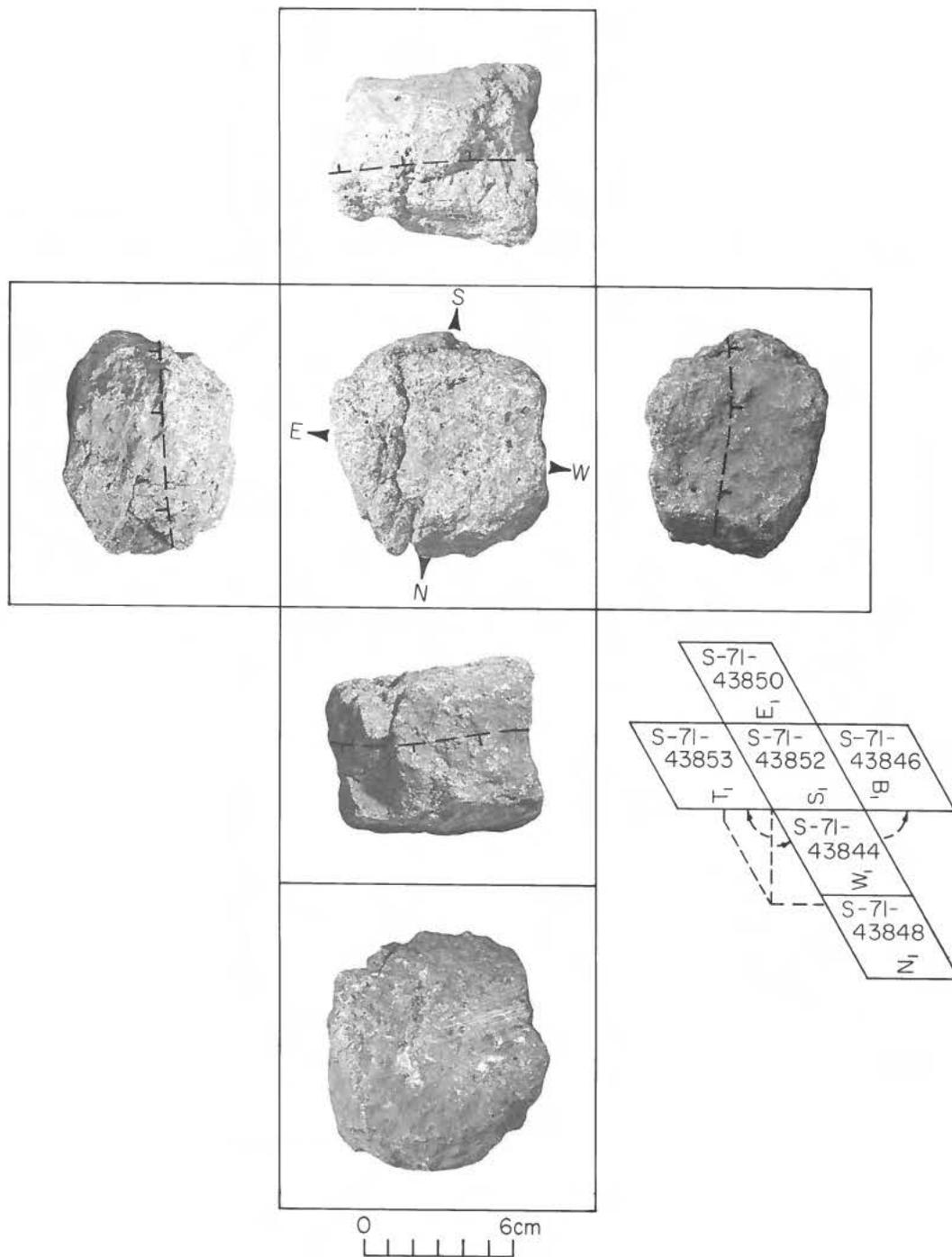


Figure 48. Orthogonal views of sample number 075.



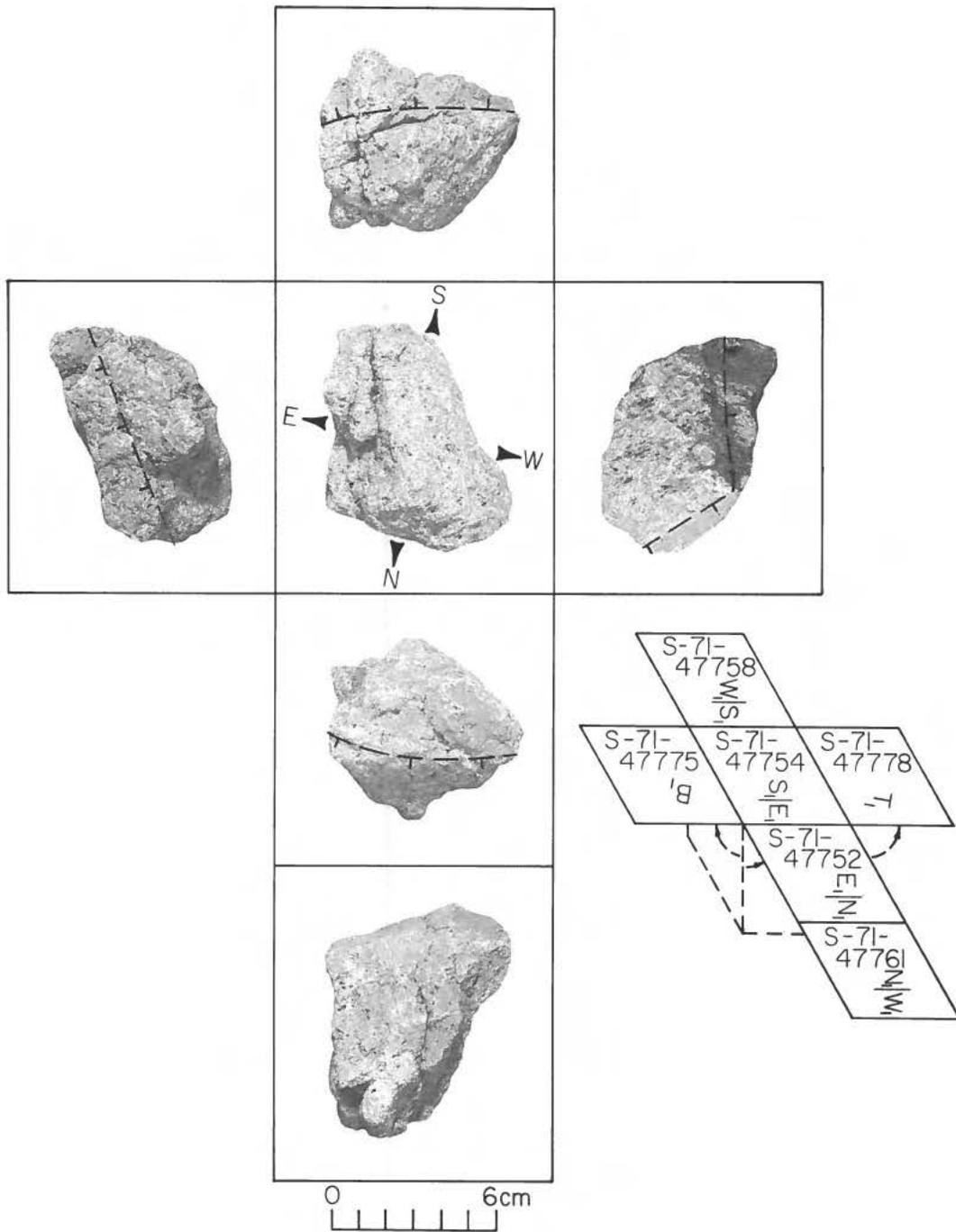


Figure 49. Orthogonal views of sample number 076.



Figure 50. Samples 080-086 collected at station 1 from east of the rim of Elbow crater. Third sampling point of radial sample. Pre-sampling, down-sun photograph AS15-85-11420, looking west.

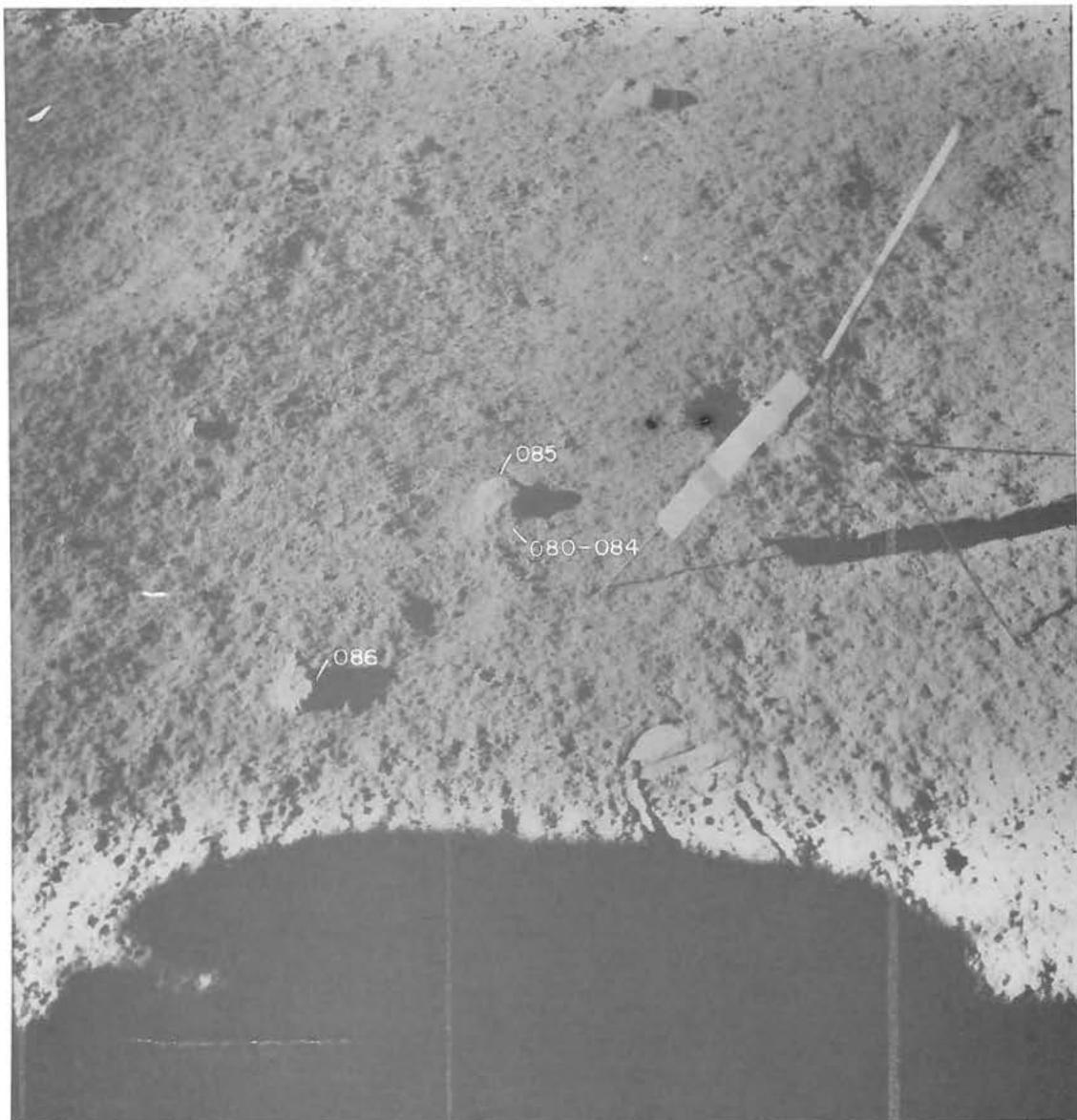
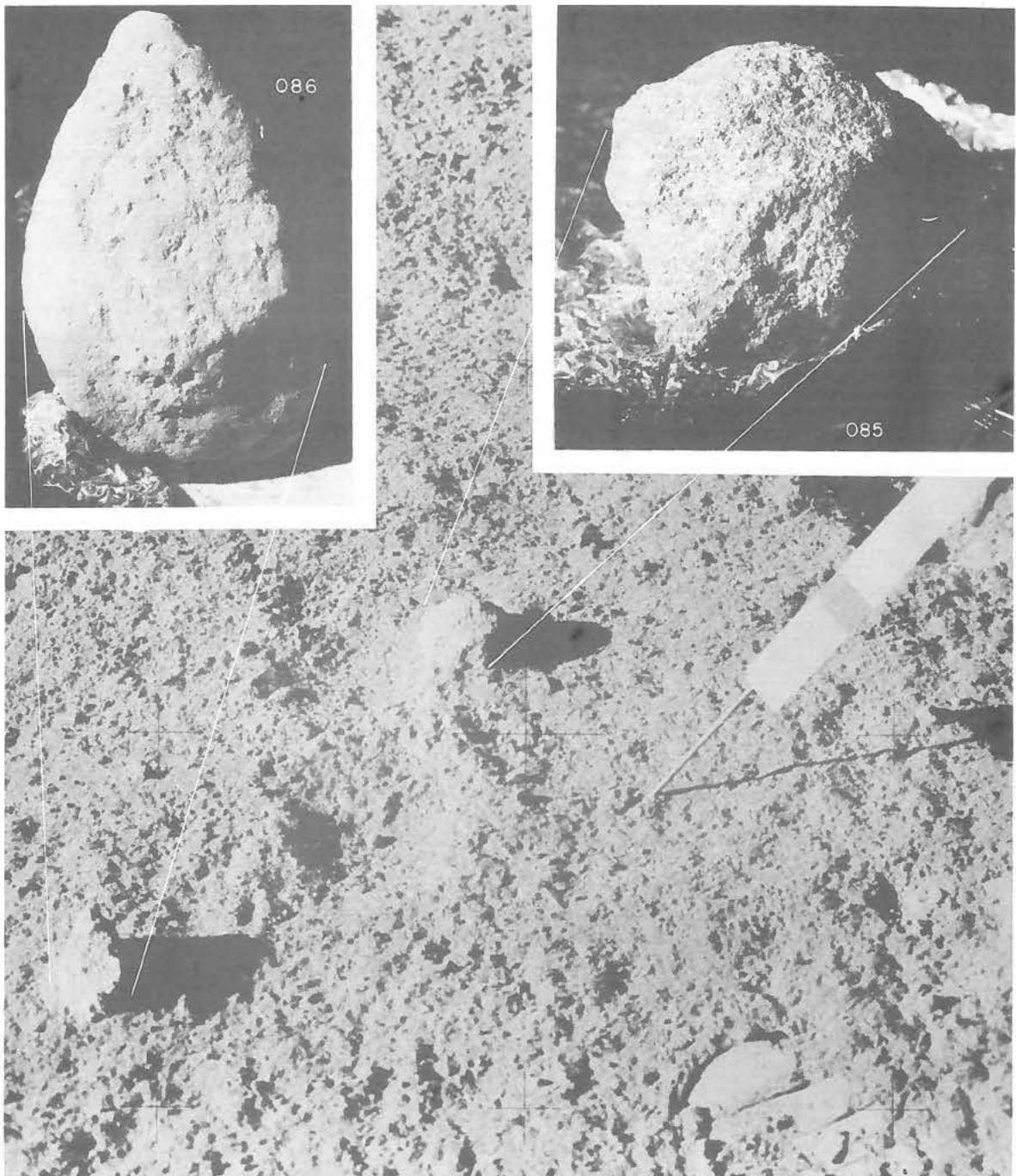


Figure 51. Sample 080-086. Pre-sampling, cross-sun photograph AS15-86-11536, looking south.



*Figure 52. Samples 085 and 086 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11536, taken cross-sun, looking south.*

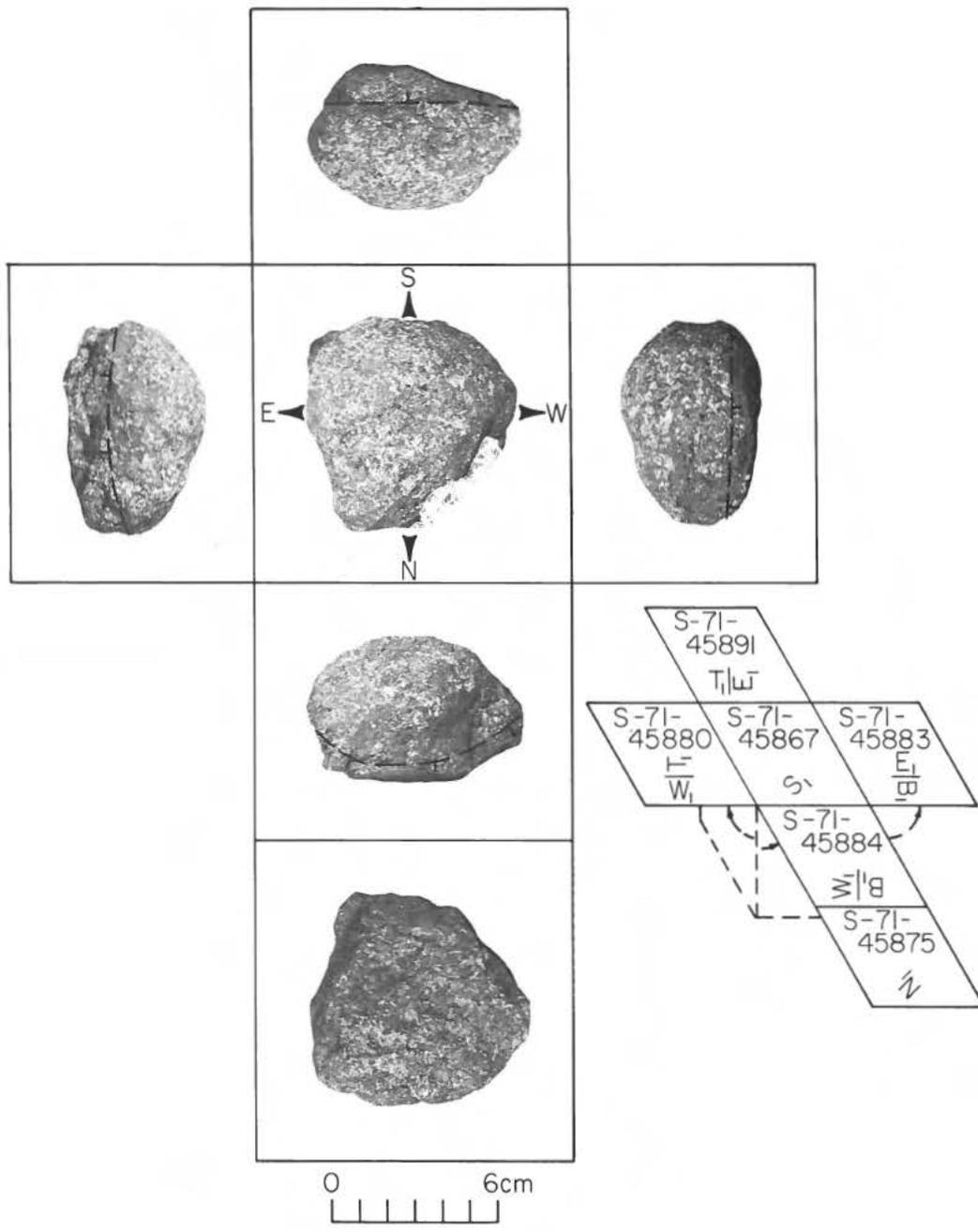


Figure 53. Orthogonal views of sample number 085.



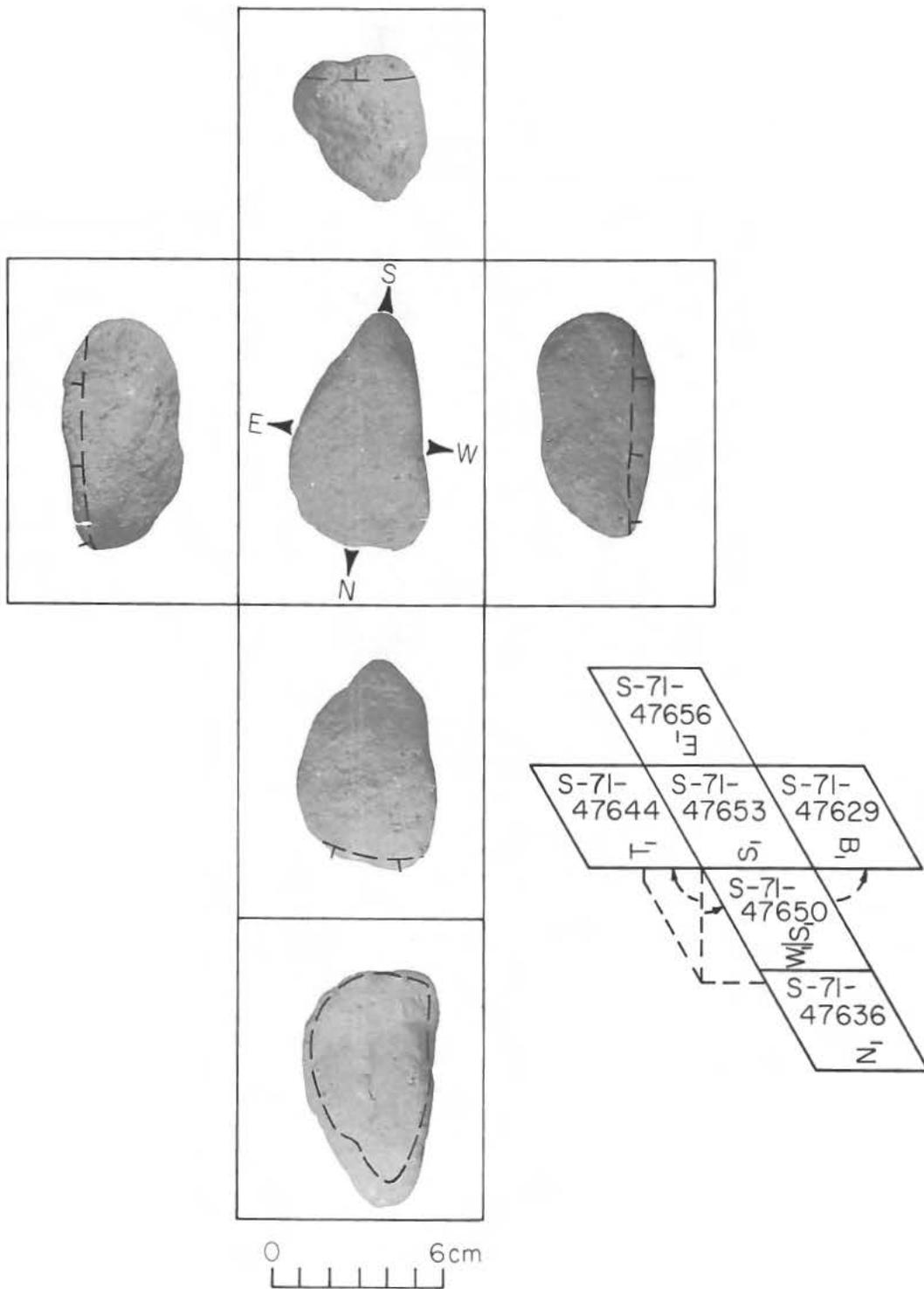


Figure 54. Orthogonal views of sample number 086.

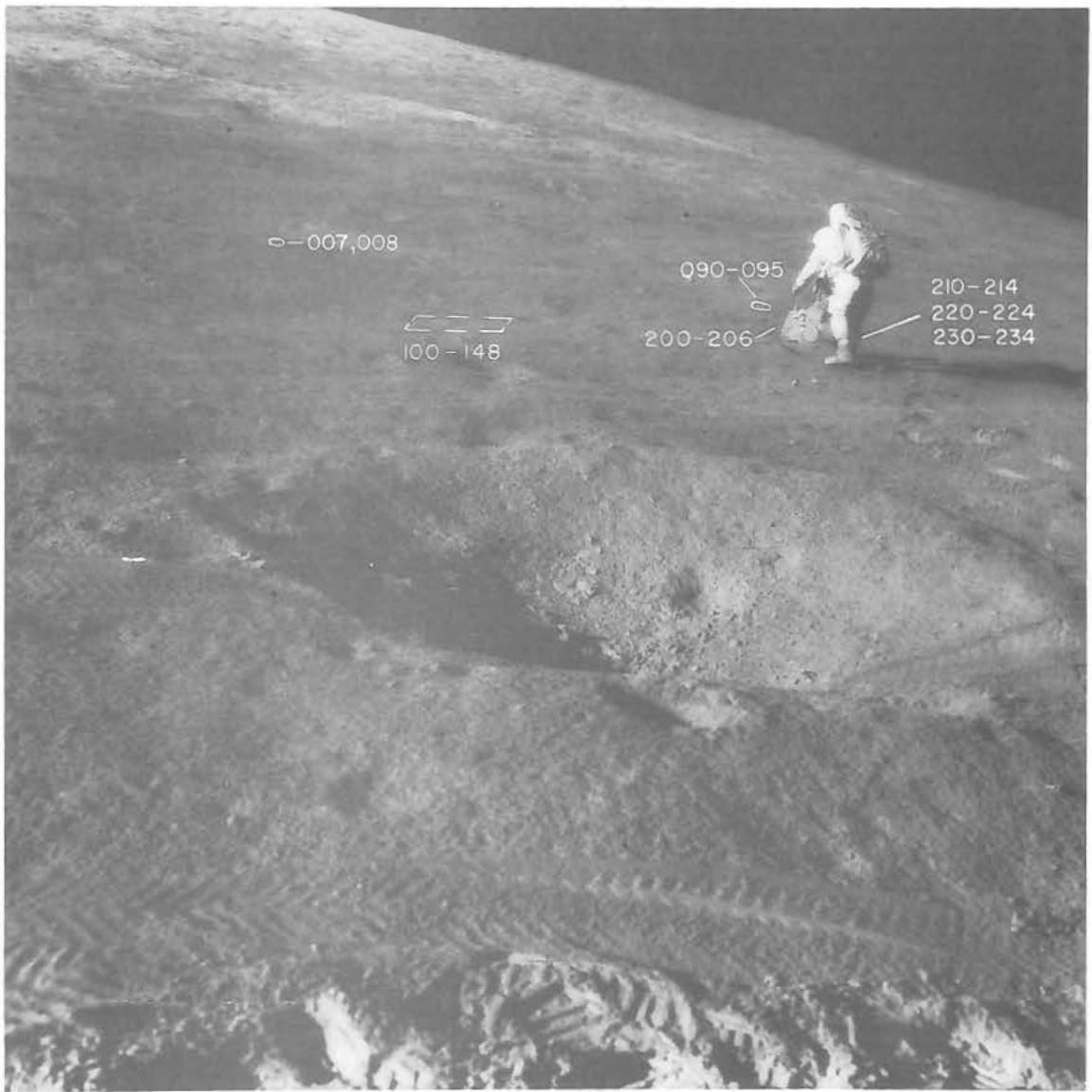


Figure 55. General view of areas from which samples 090-234 were collected at station 2. Pre-sampling, cross-sun photograph AS15-85-11435, looking south.

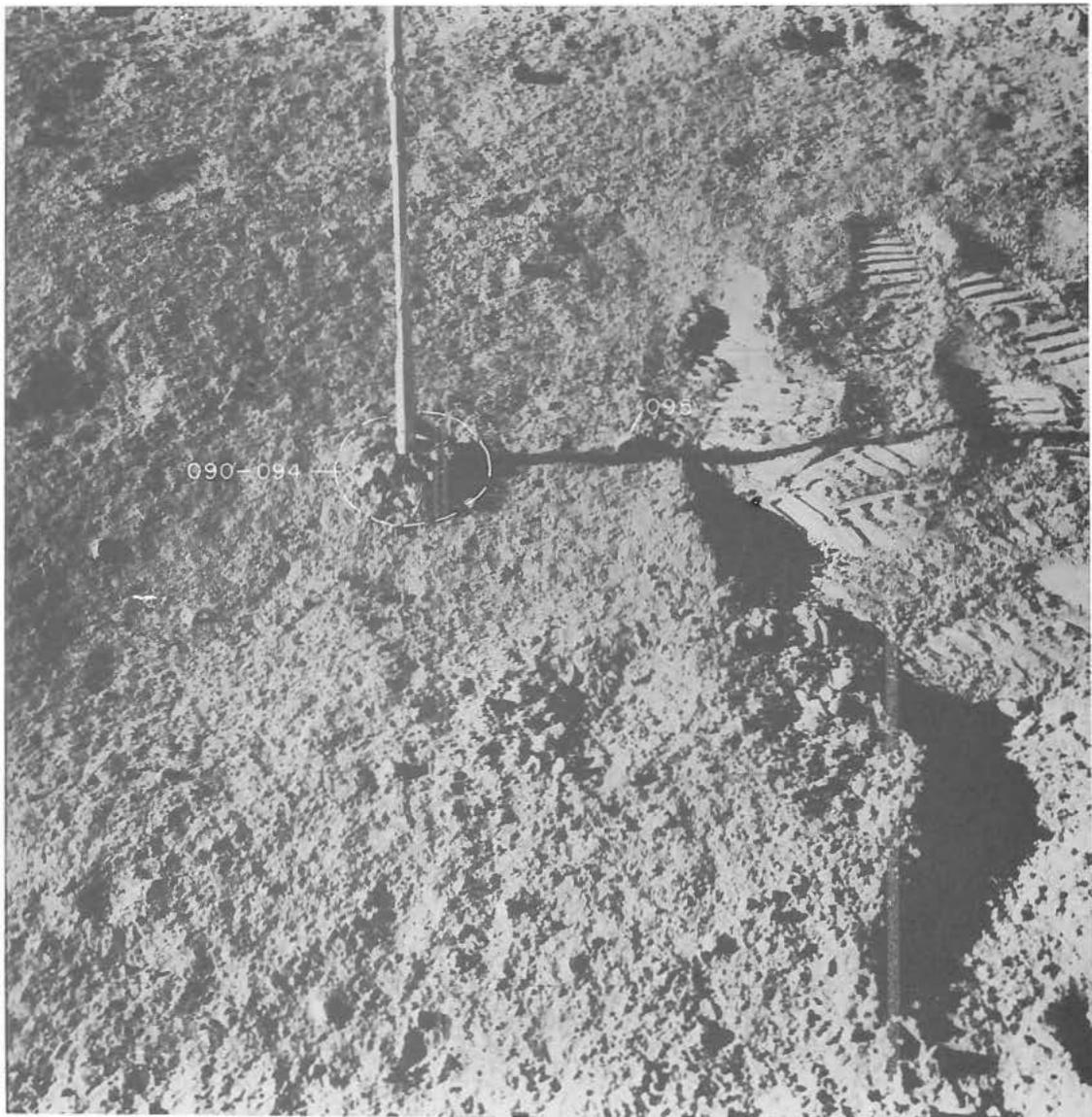


Figure 56. Samples 090-095 collected at station 2. Pre-sampling, cross-sun photograph AS15-86-11549, looking south.



Figure 57. Samples 100-148 collected at station 2 as a comprehensive sample. Pre-sampling, cross-sun photograph AS15-85-11442, looking southwest.

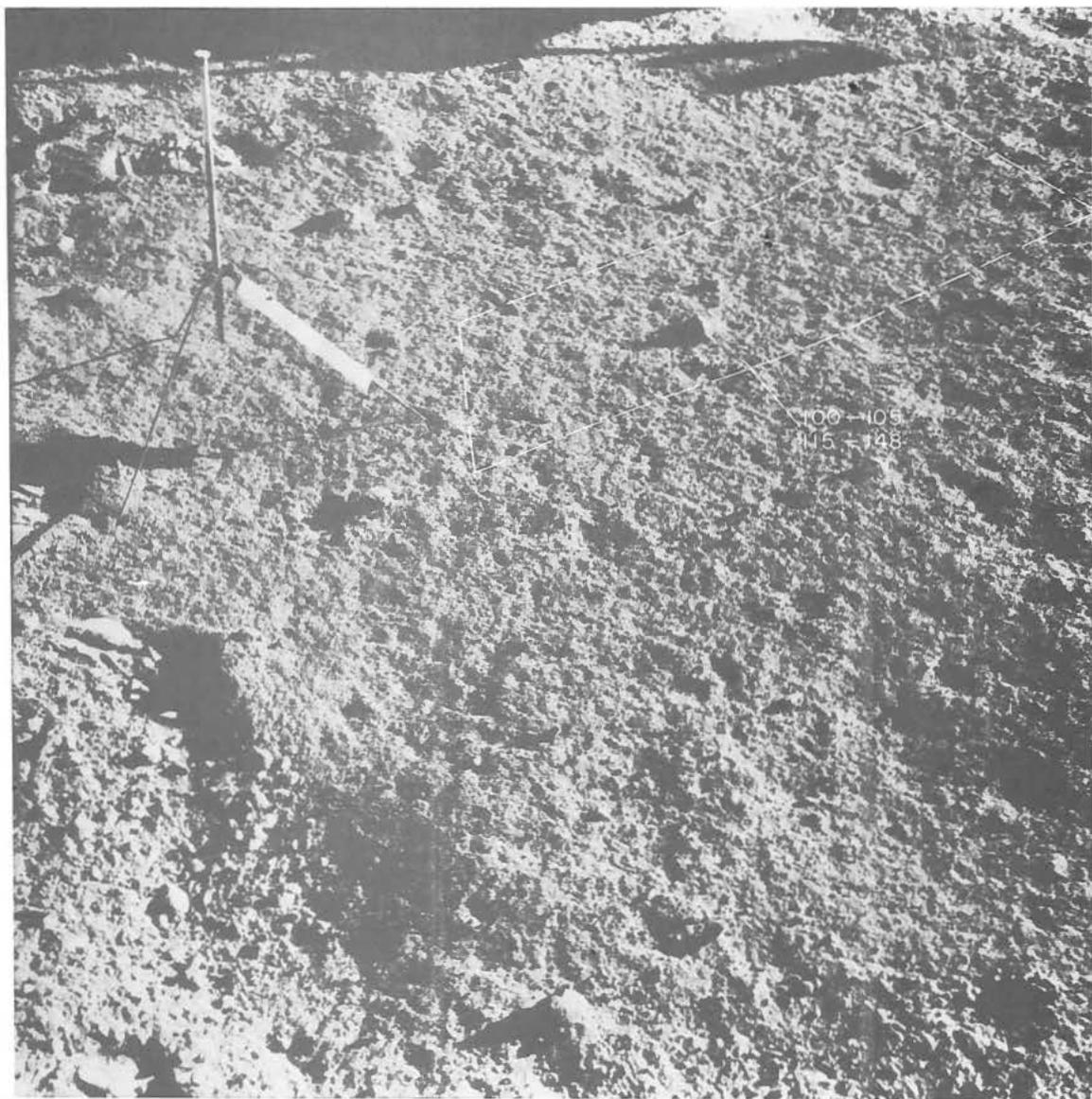


Figure 58. Sample 100-148. Pre-sampling, cross-sun photograph AS15-86-11567, looking north.

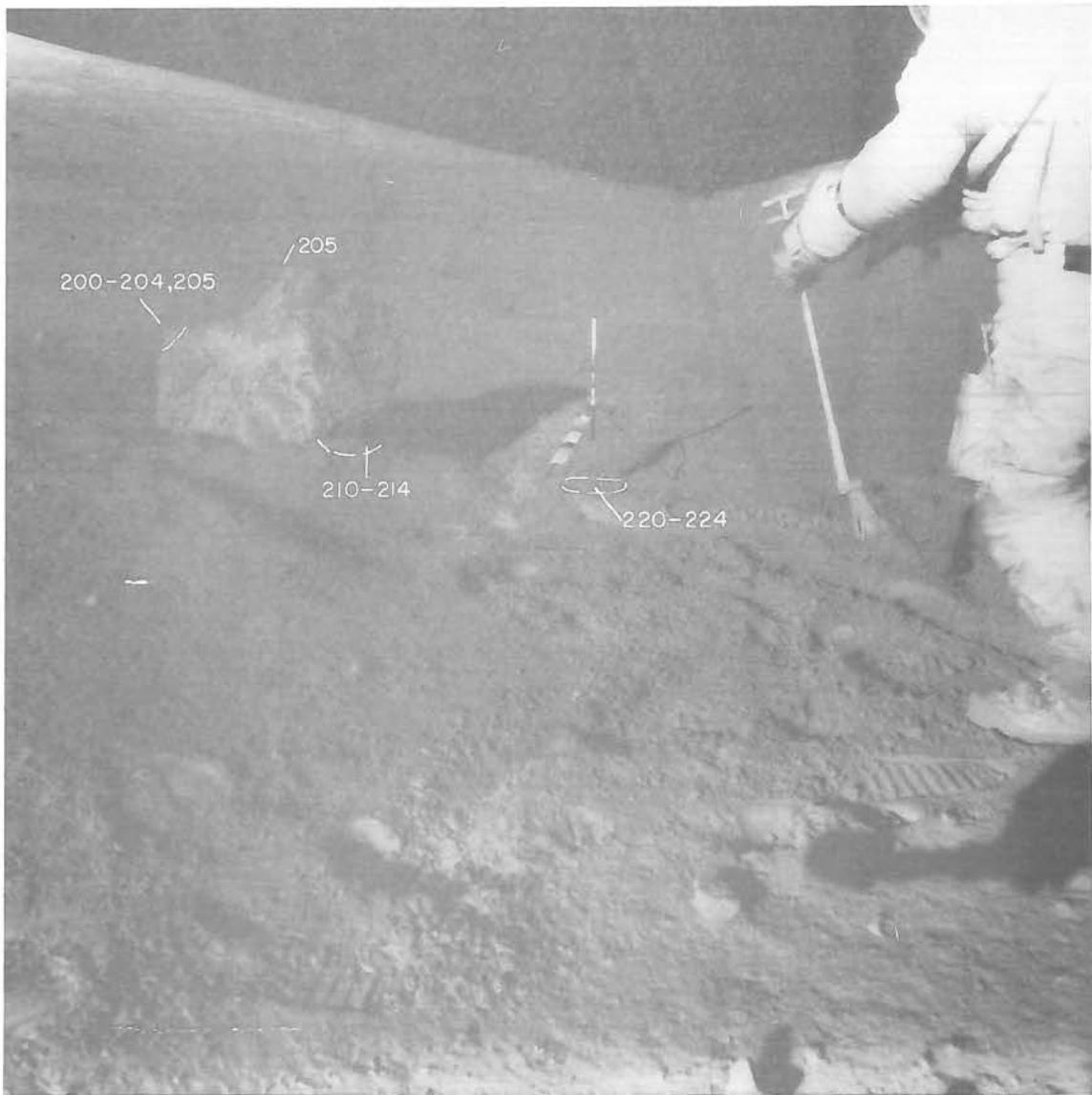


Figure 59. General view of samples 200-244 collected at station 2 from on and near the boulder. Pre-sampling, cross-sun photograph AS15-85-11440, looking southwest.



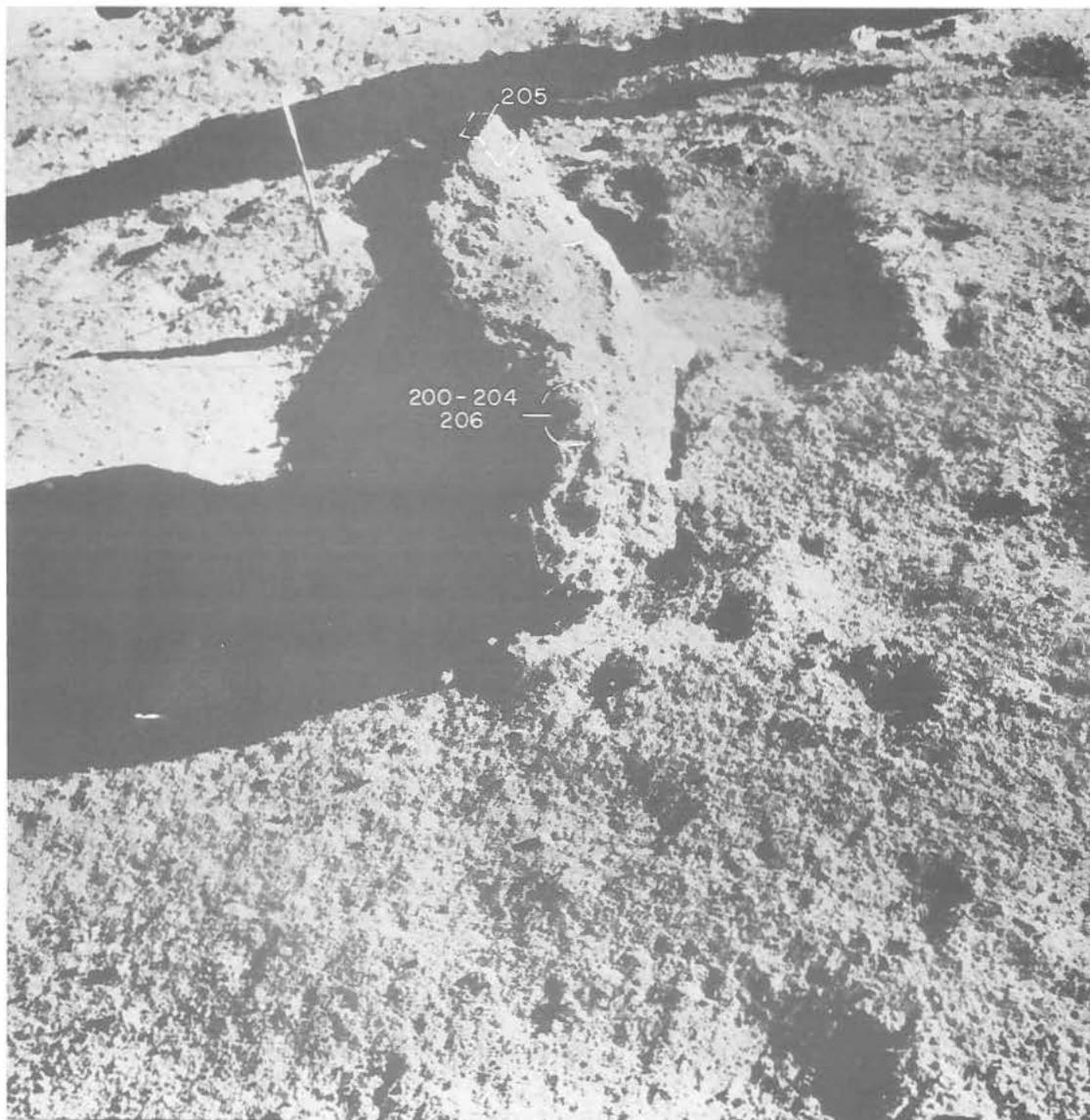


Figure 60. Samples 200-206 collected at station 2. Pre-sampling, cross-sun photograph AS15-86-11547, looking north.

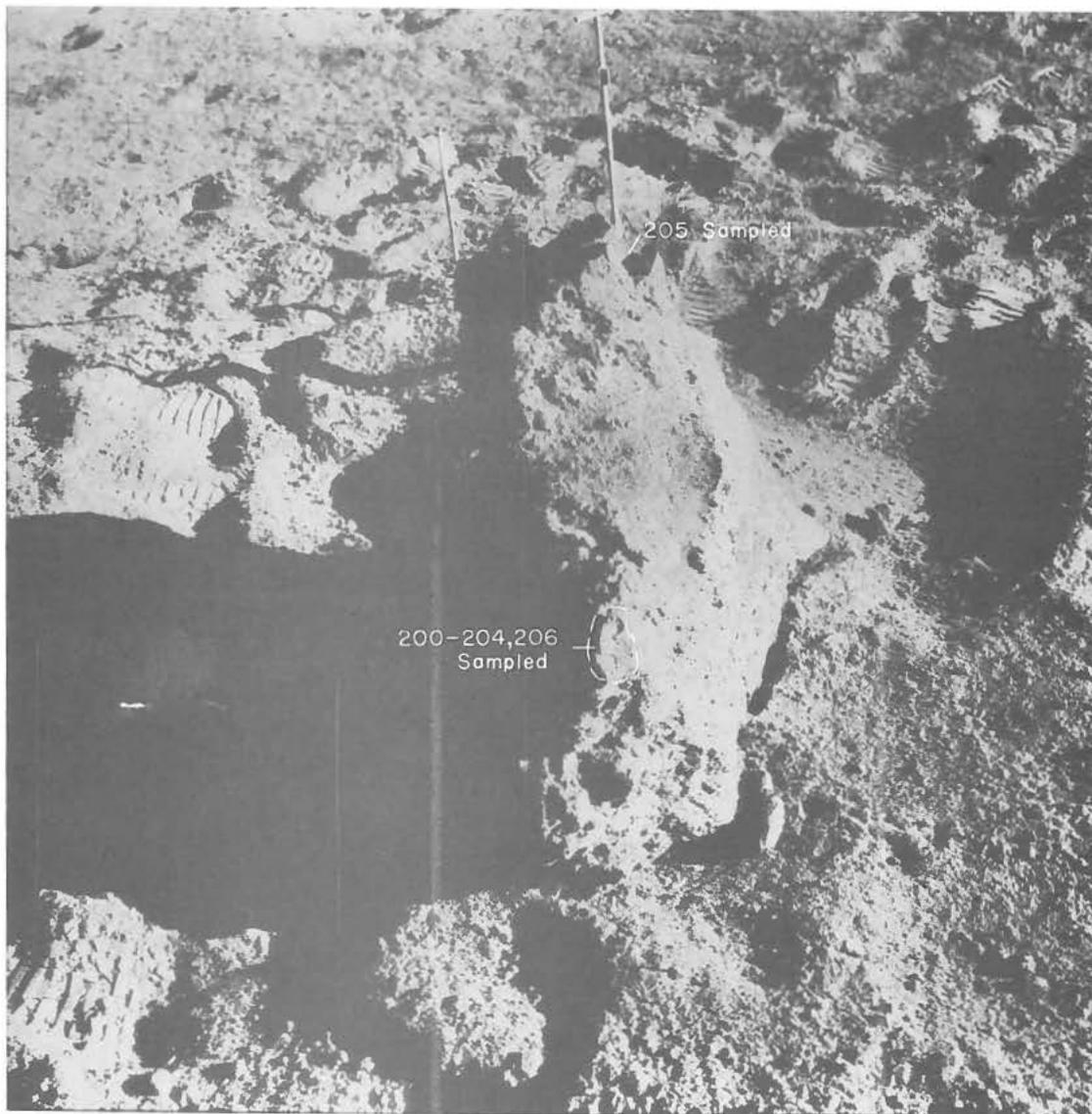


Figure 61. Samples 200-206. Post-sampling, cross-sun photograph AS15-86-11558, looking north.

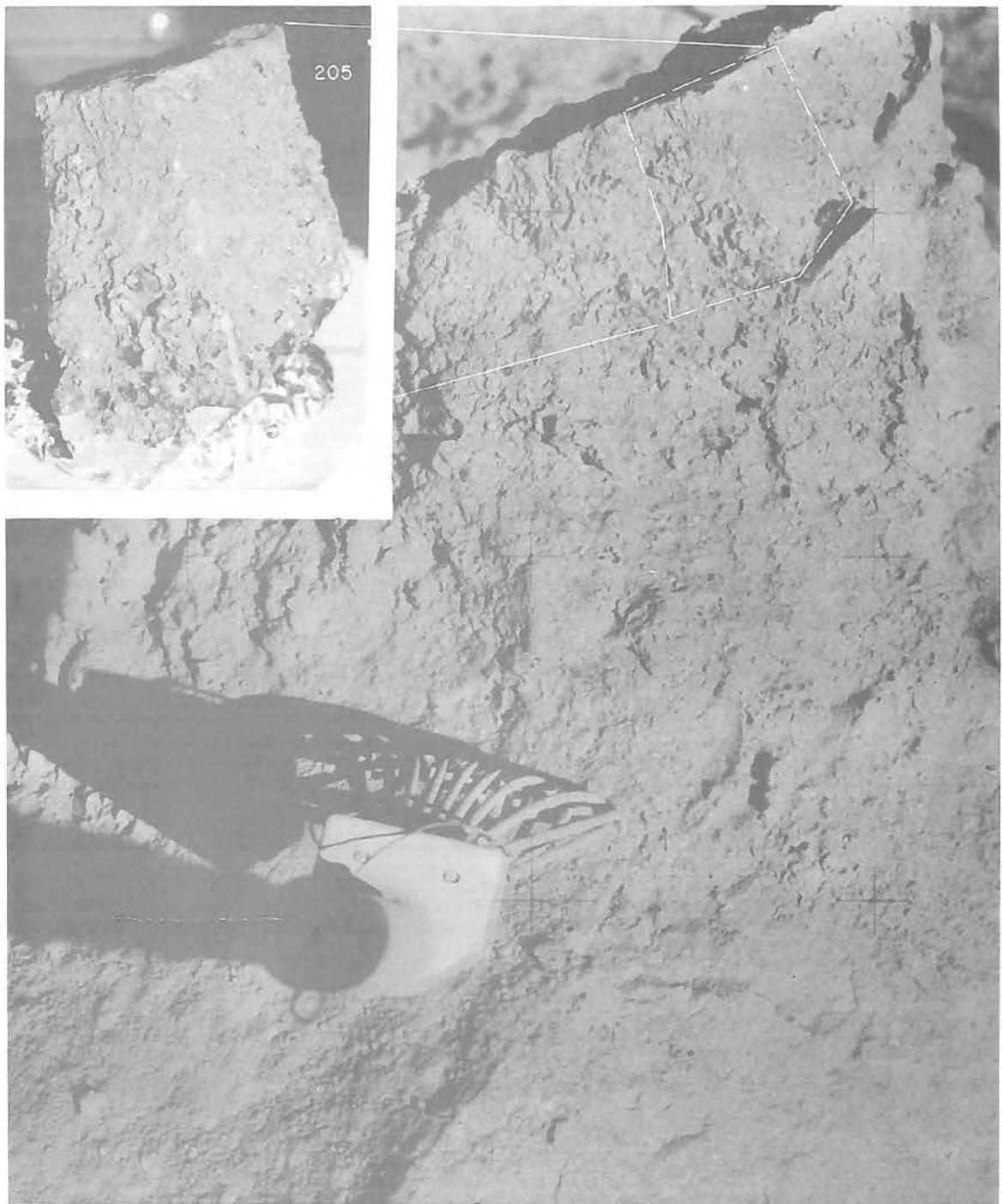


Figure 62. Sample 205 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11552, taken cross-sun, looking northwest.

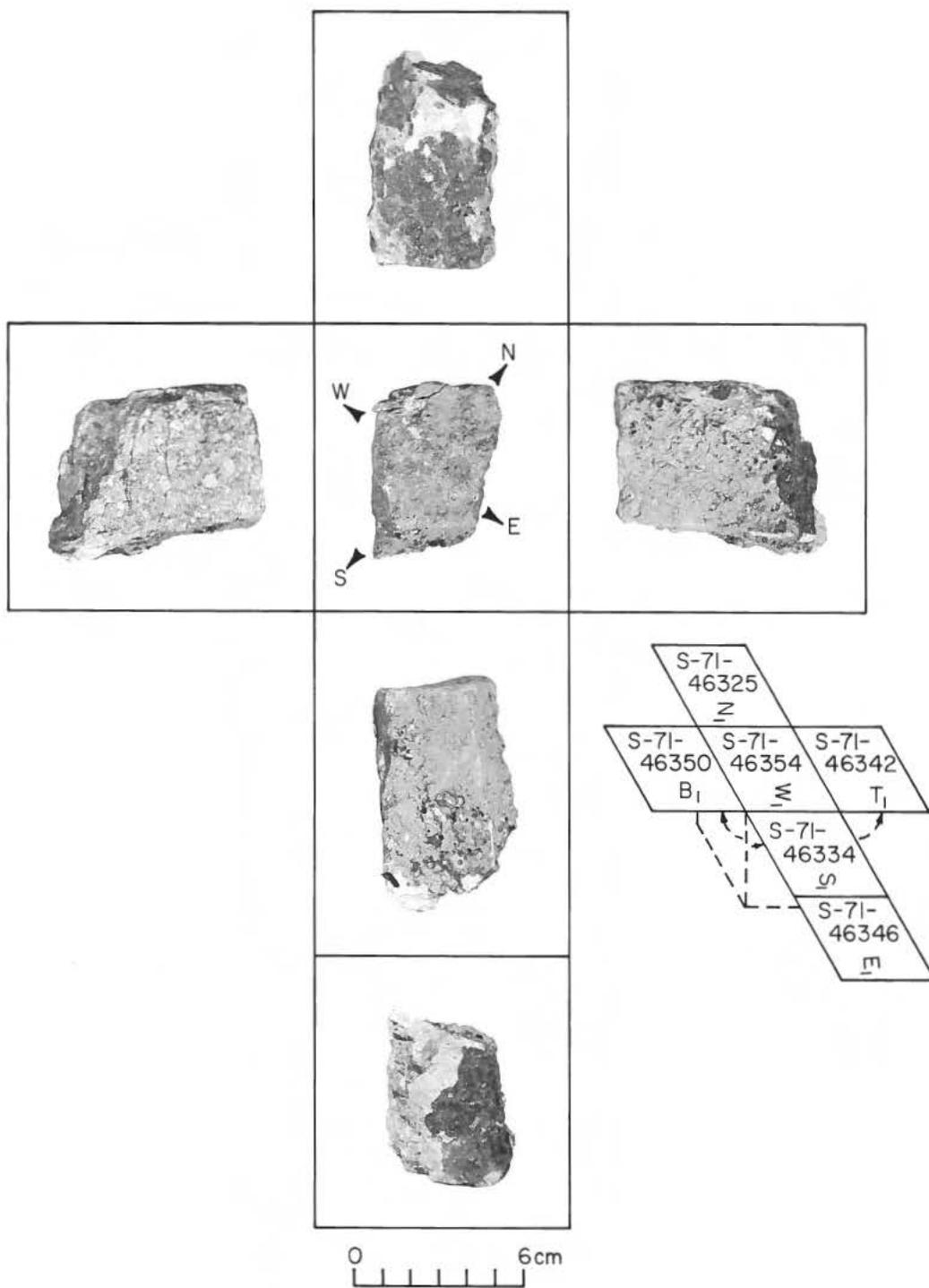


Figure 63. Orthogonal views of sample number 205.



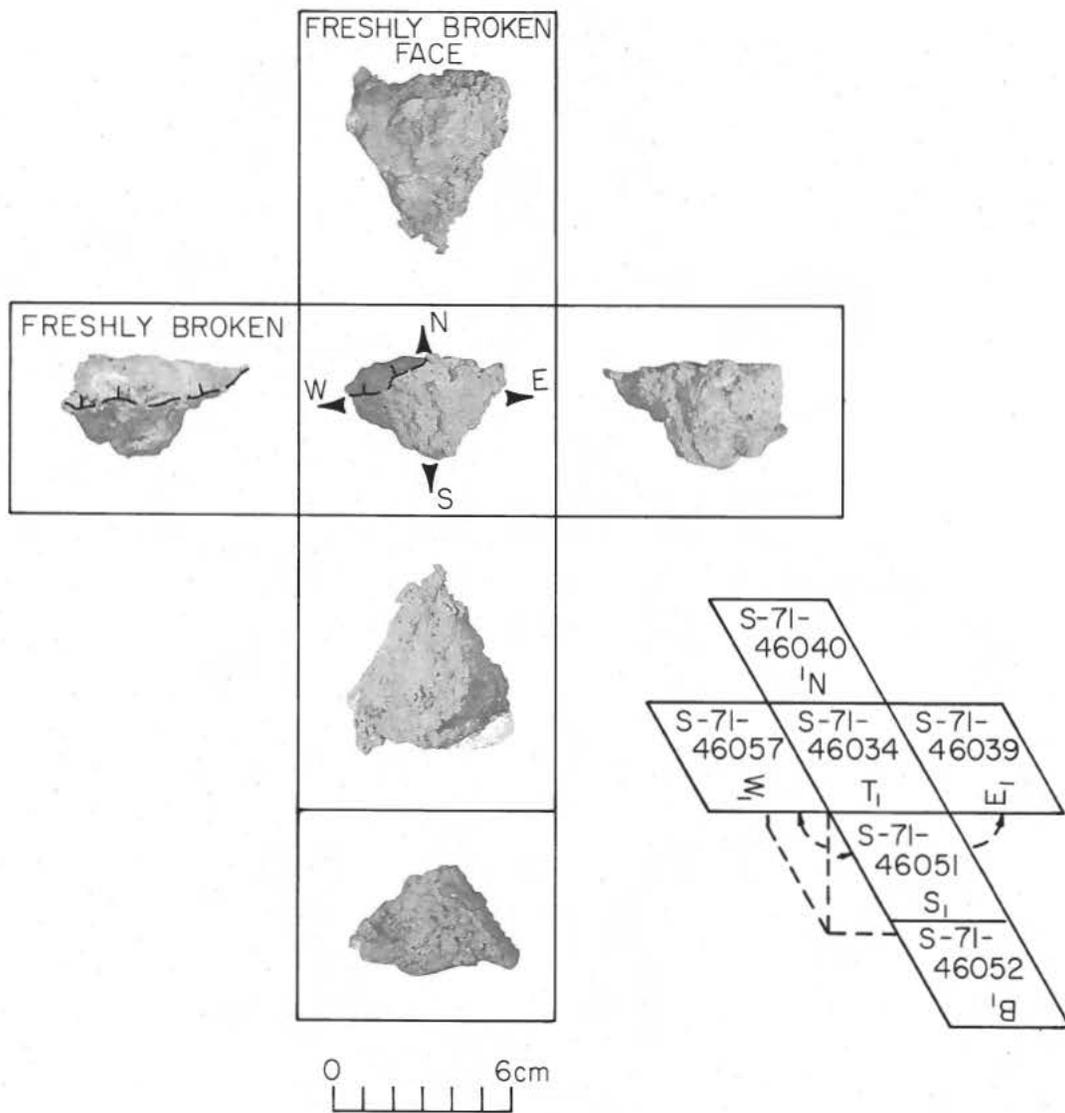


Figure 64. Orthogonal views of sample number 206.

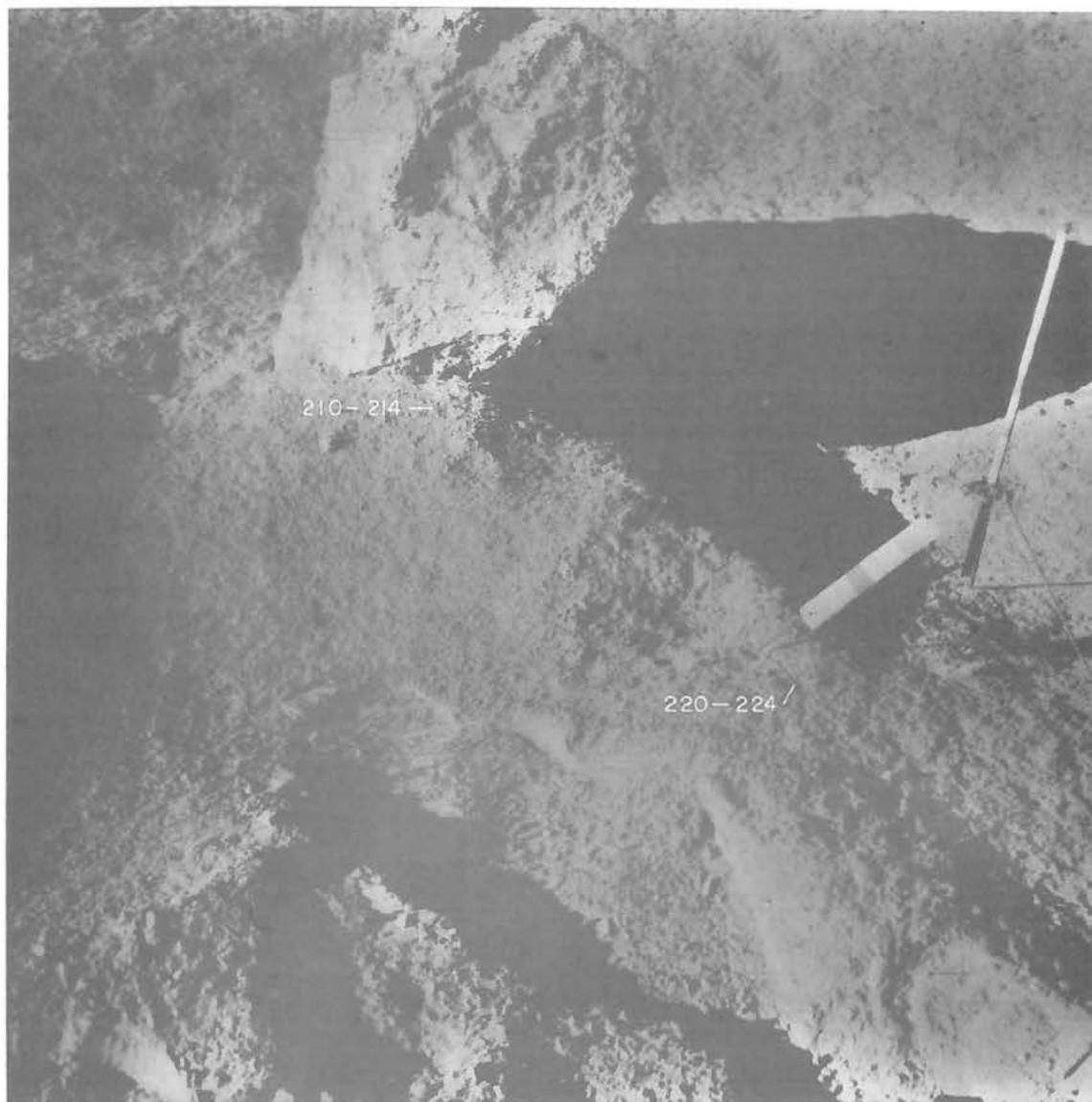


Figure 65. Samples 210-224 collected at station 2. Pre-sampling, cross-sun, photograph AS15-86-11544, looking south.

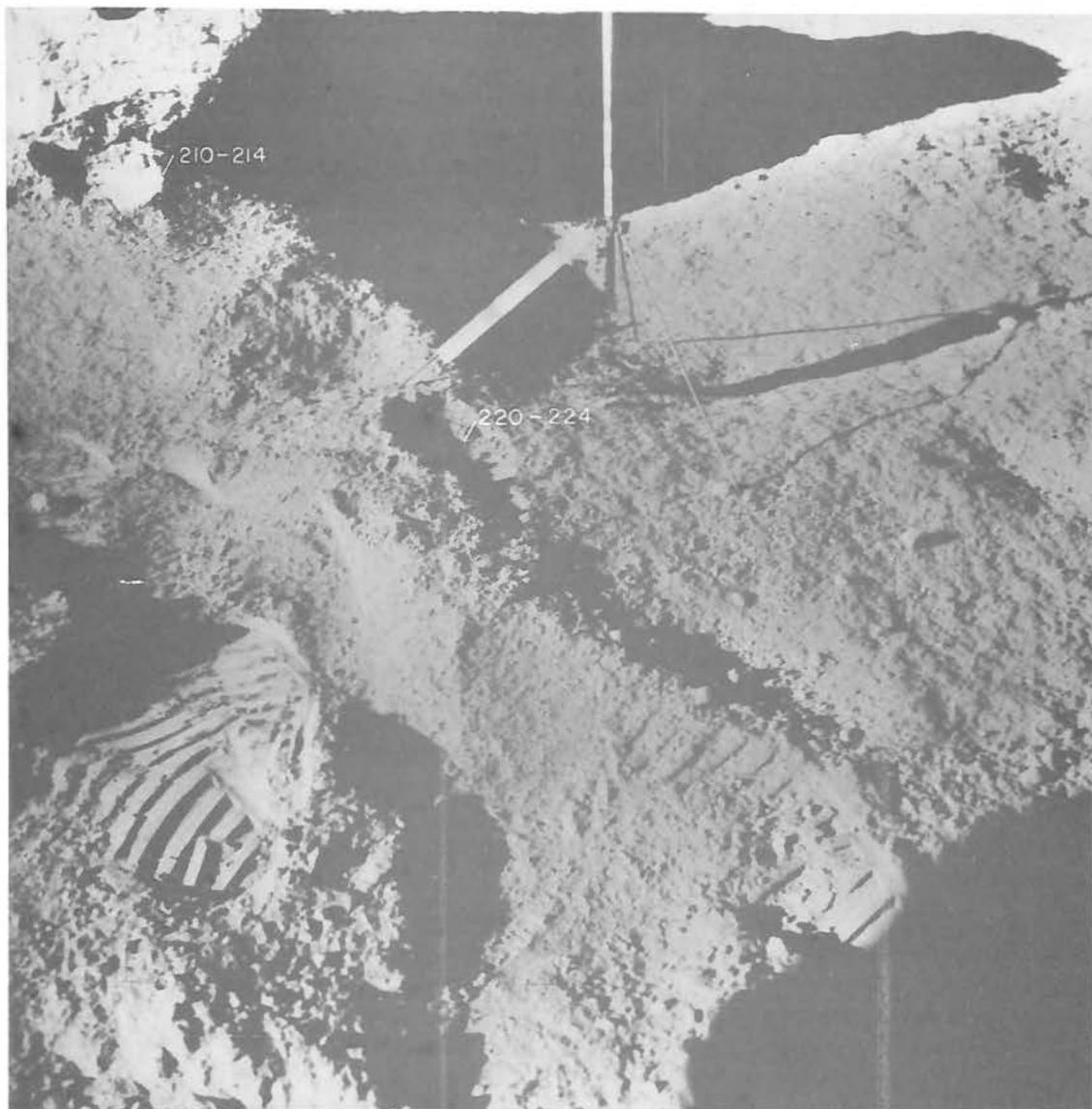


Figure 66. Samples 210-224. Post-sampling, cross-sun photograph AS15-86-11557, looking south.

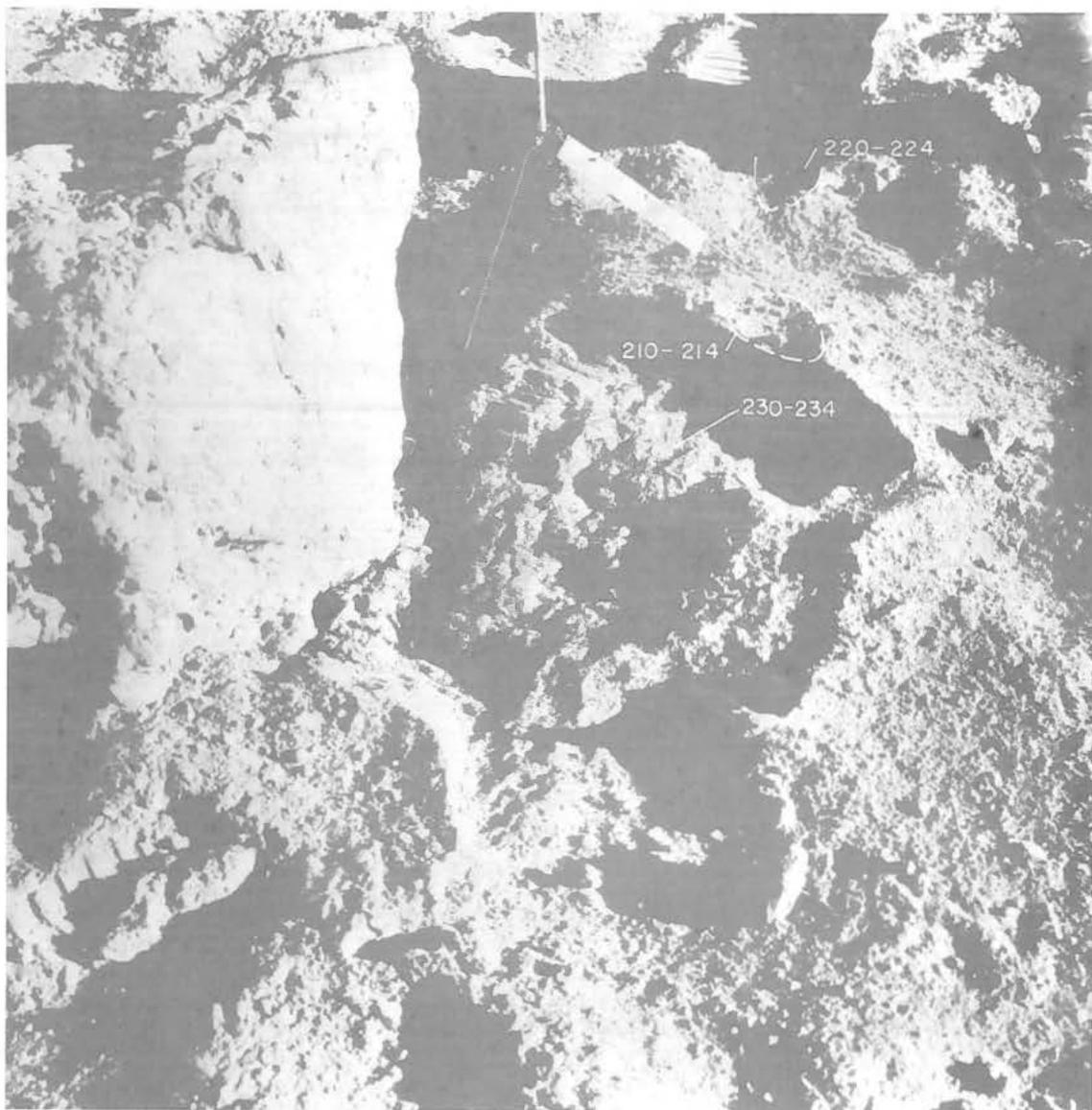


Figure 67. Samples 230-234 collection at station 2 from beneath the large boulder. Pre-sampling, cross-sun, photograph AS15-86-11564, looking north.

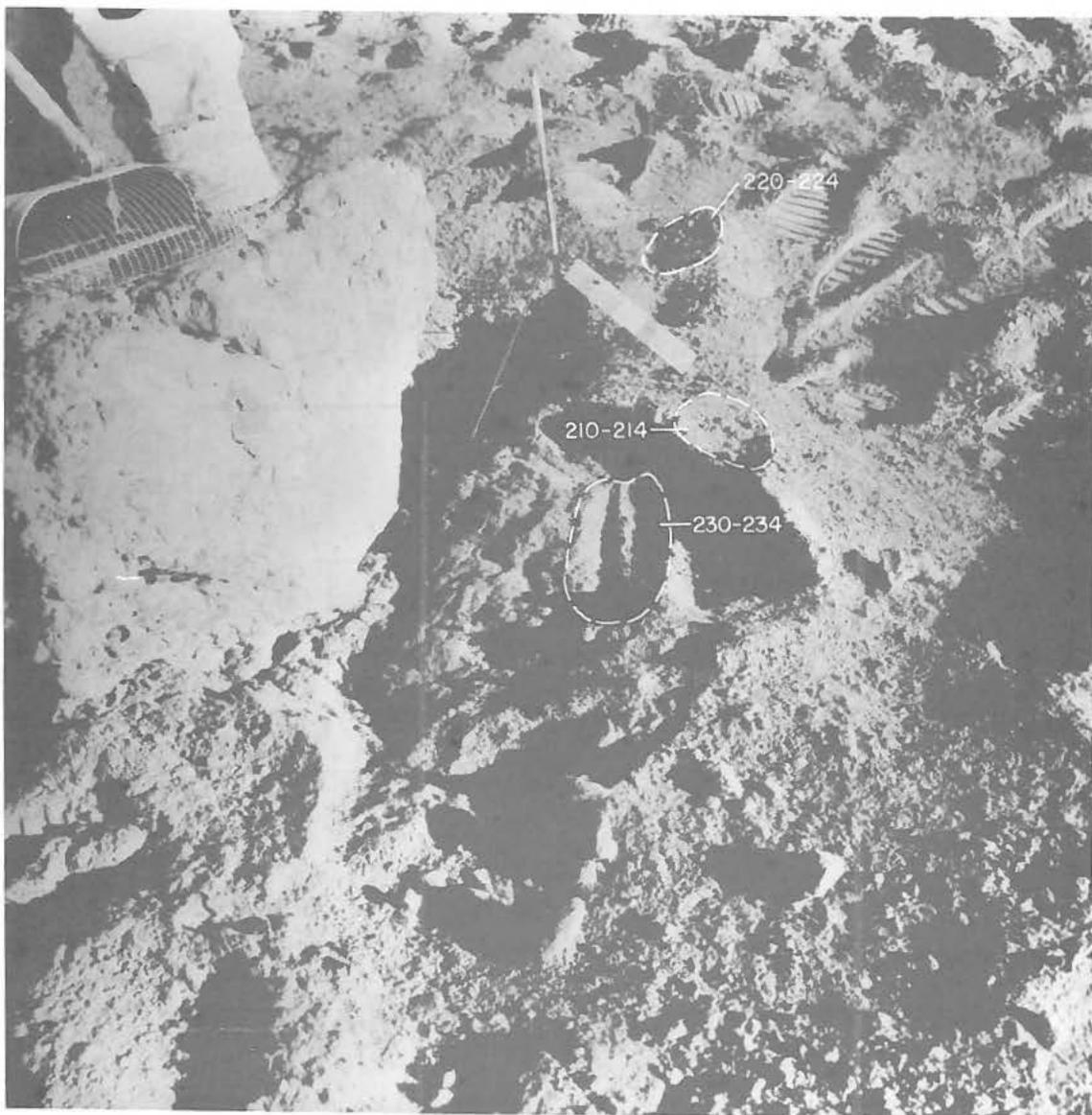


Figure 68. Samples 230-234. Post-sampling, cross-sun, photograph AS15-86-11565, looking north.



Figure 69. Samples 240-254 collected at station 6 from the bottom and rim of a fresh crater. Pre-sampling, down-sun photograph AS15-85-11499, looking west.

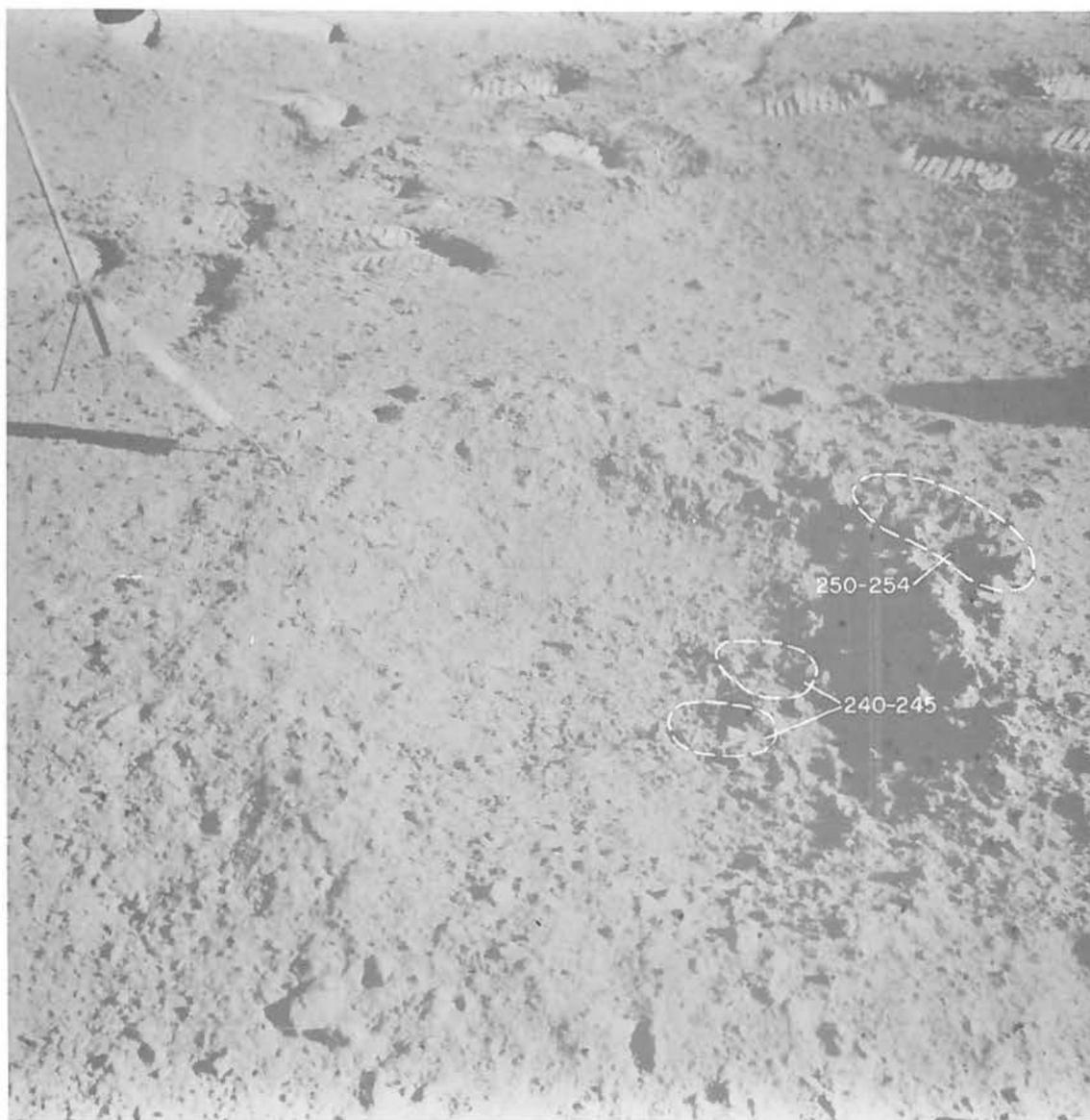


Figure 70. Samples 240-245, pre-sampling, cross-sun, photograph AS15-86-11610, looking north.



Figure 71. Samples 255, 256, (and 257, not identified) collected at station 6. Pre-sampling, down-sun, photograph AS15-86-11631, looking west.

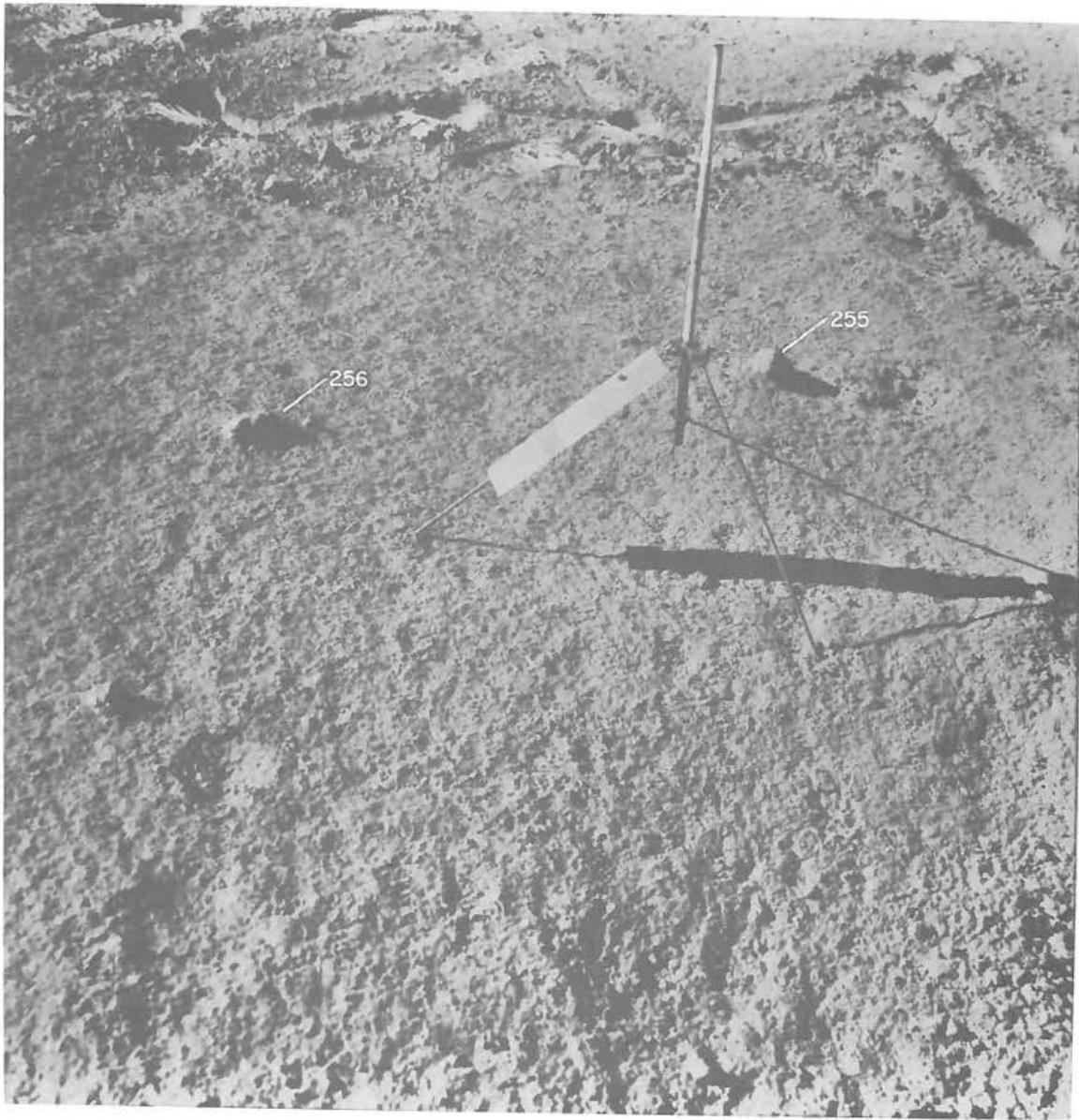


Figure 72. Samples 255, 256, (and 257, not identified). Pre-sampling cross-sun, photograph AS15-86-11630, looking south.

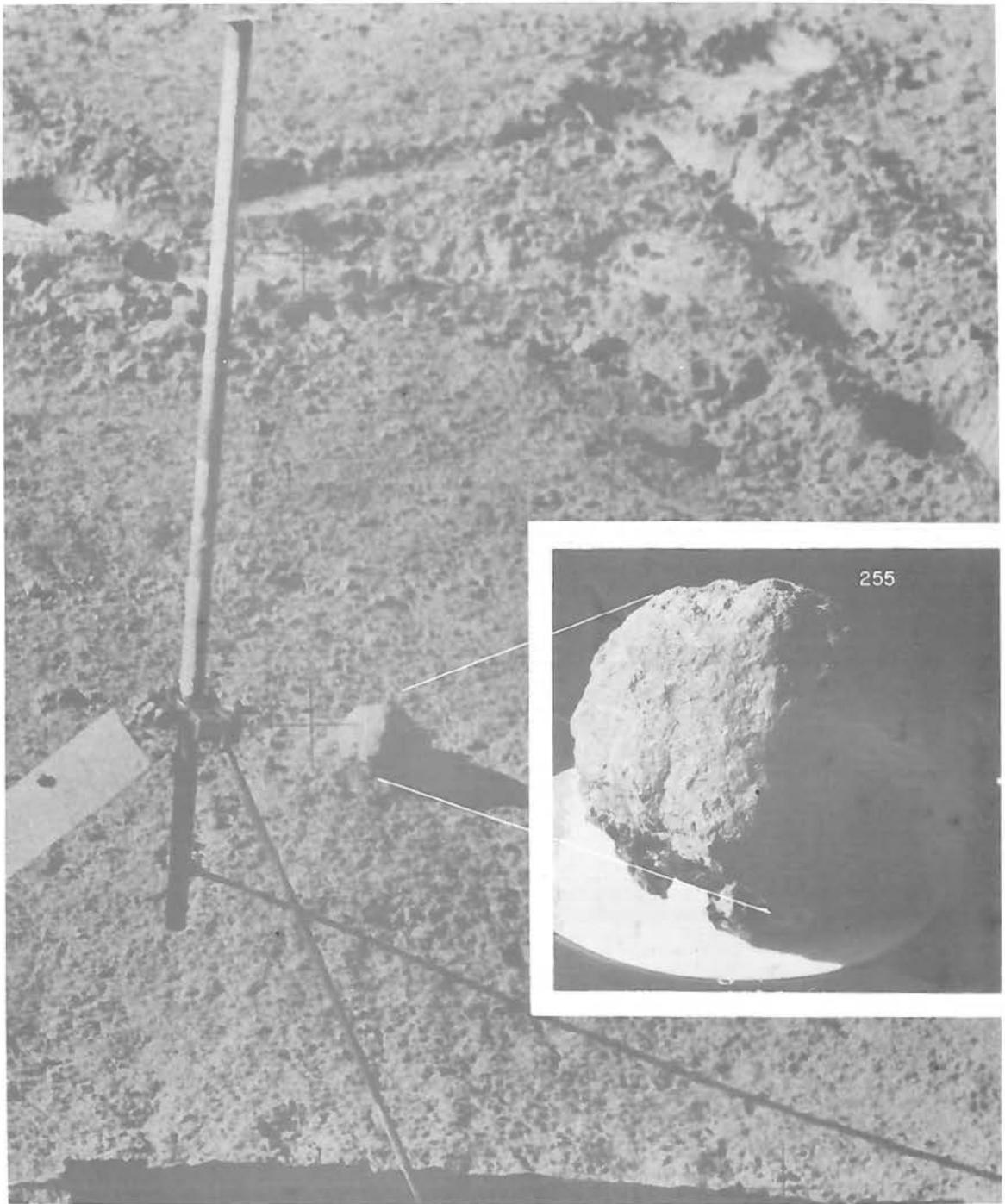


Figure 73. Sample 255 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11630, taken cross-sun, looking south.

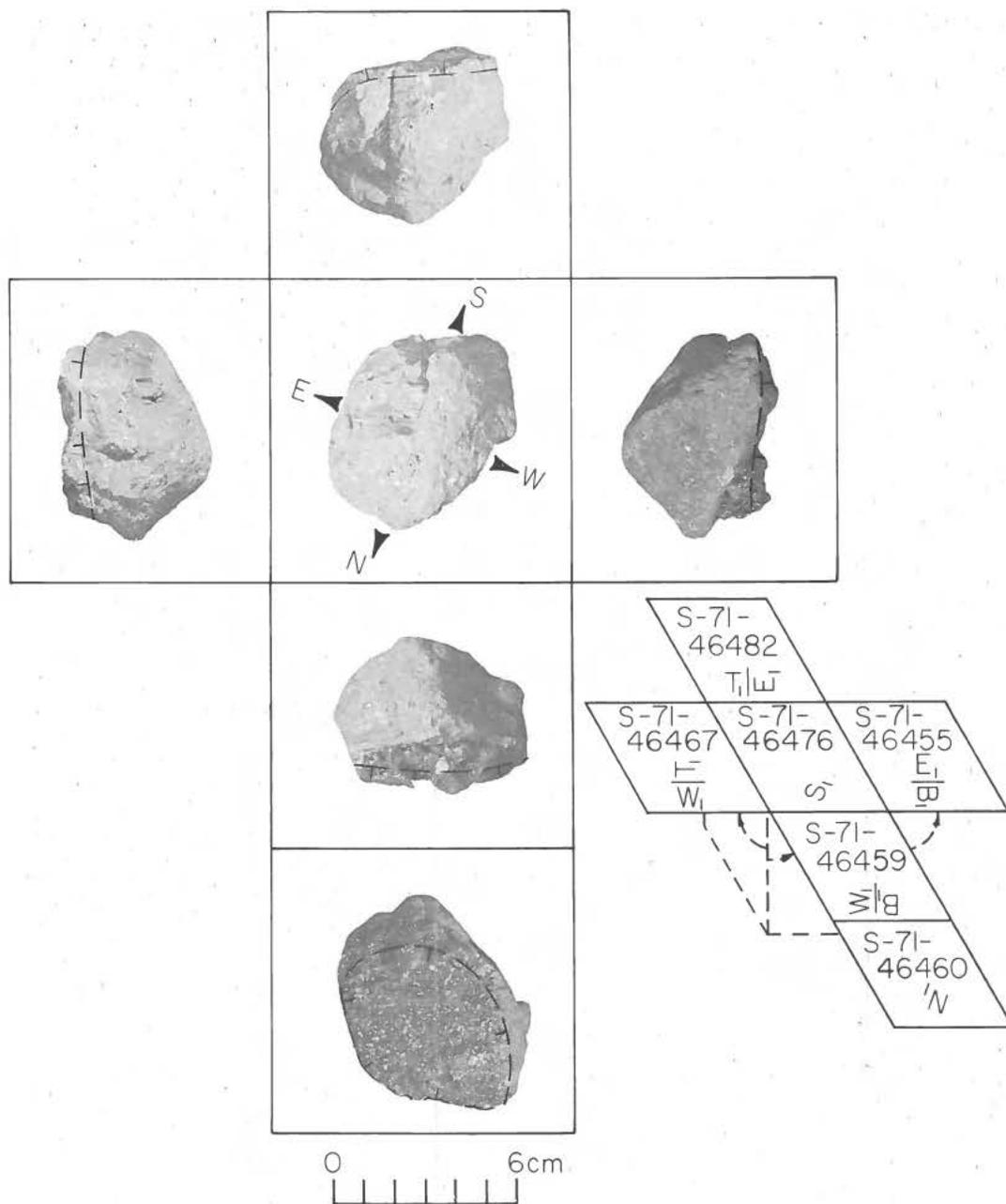


Figure 74. Orthogonal views of sample number 255.

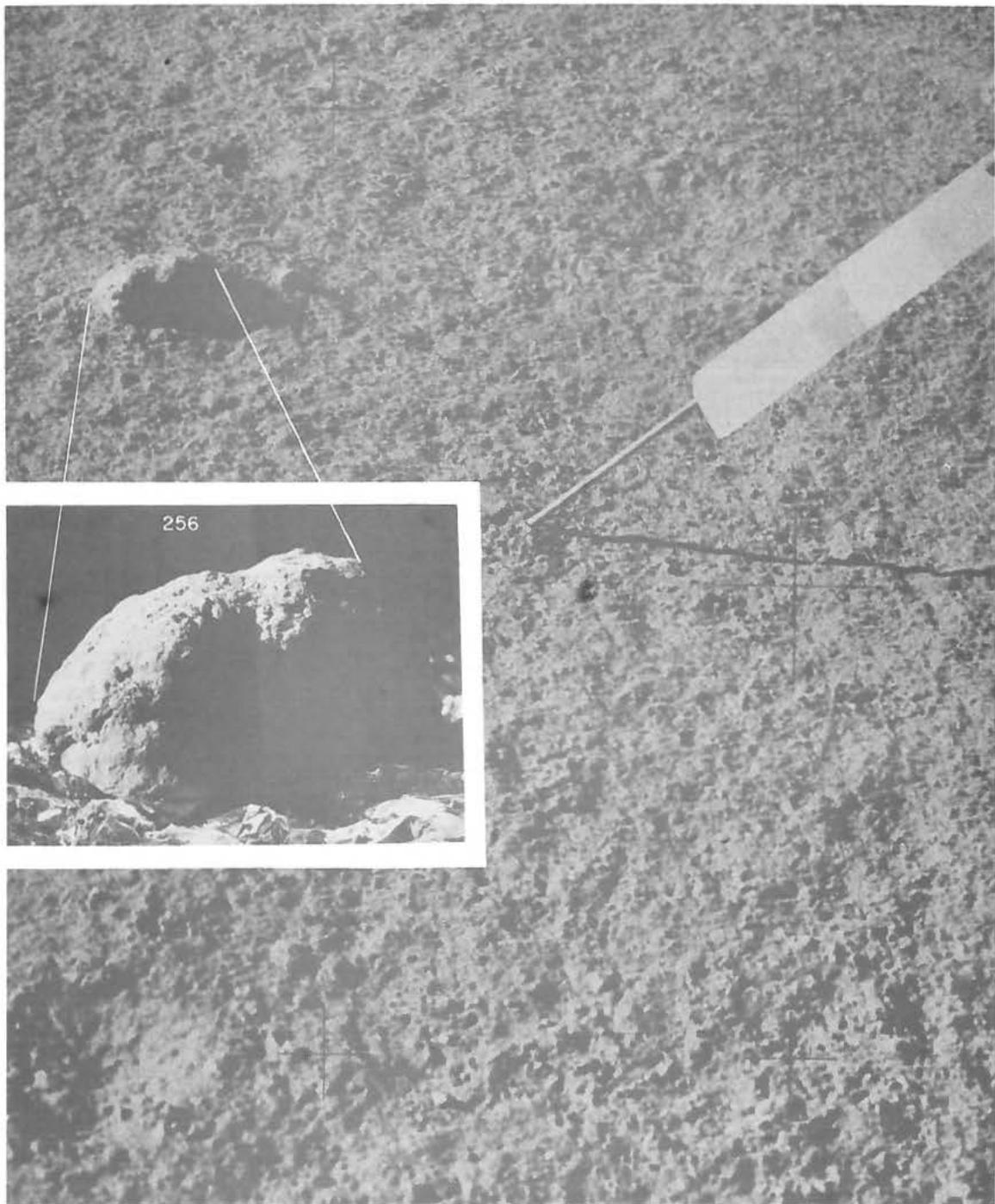


Figure 75. Sample 256 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11630, taken cross-sun, looking south.

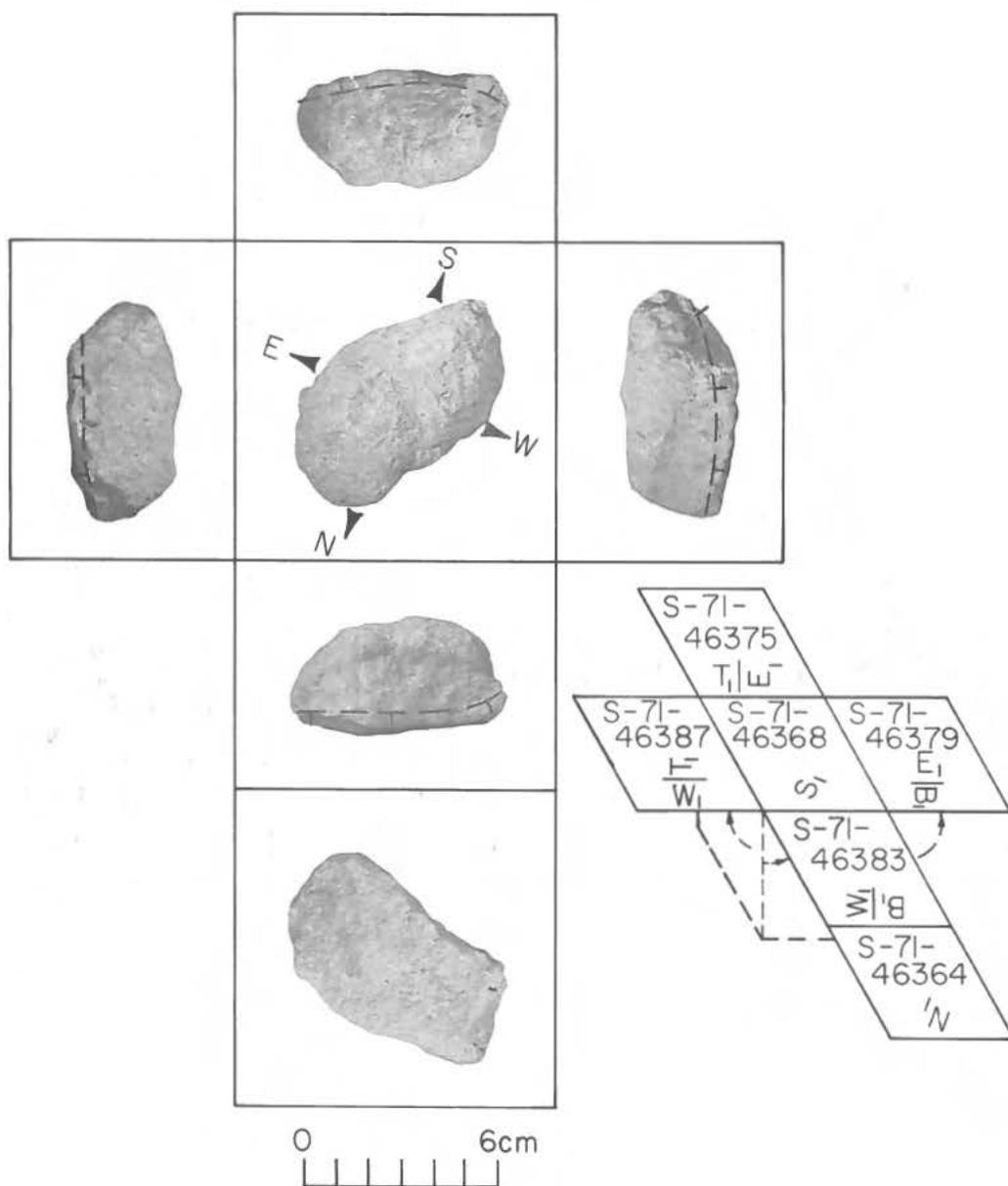


Figure 76. Orthogonal views of sample number 256.

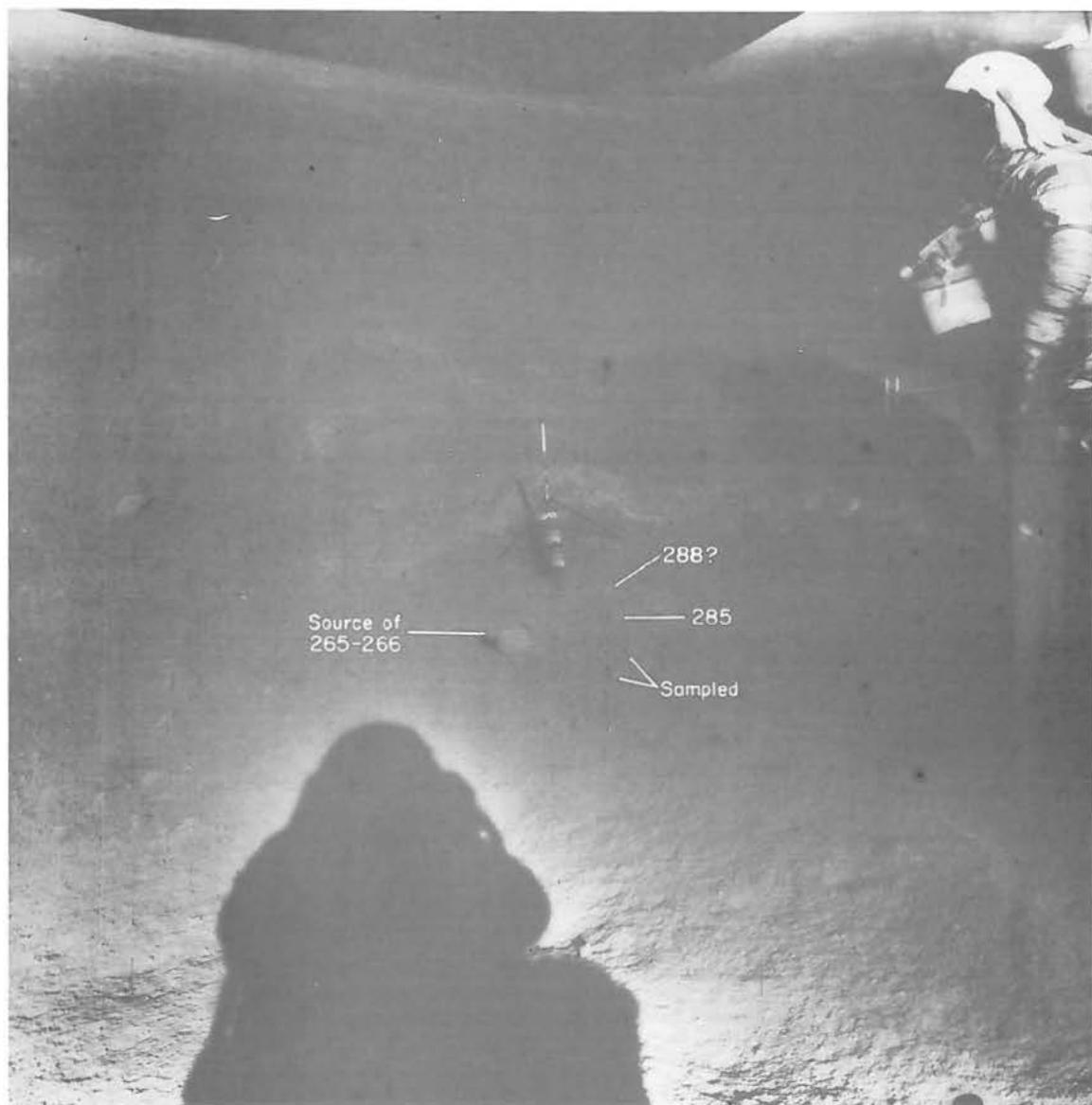


Figure 77. Samples 265, 266, 285, 288 (and vicinity of 259, 268, 269, 286, 287, and 289, not identified) collected at station 6 from the north rim of the 12-m crater. Pre-sampling, down-sun, photograph AS15-85-11523, looking west.

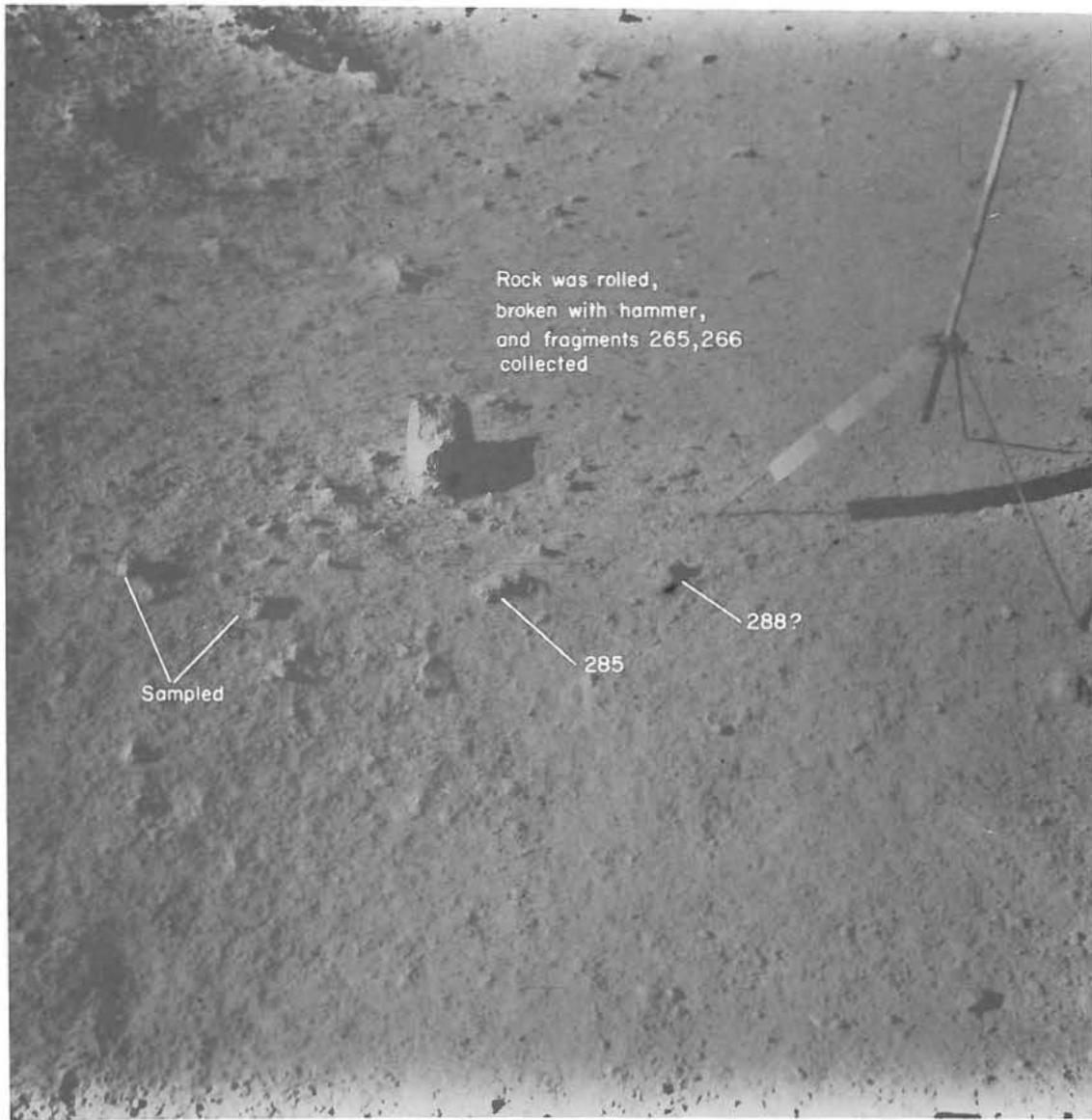
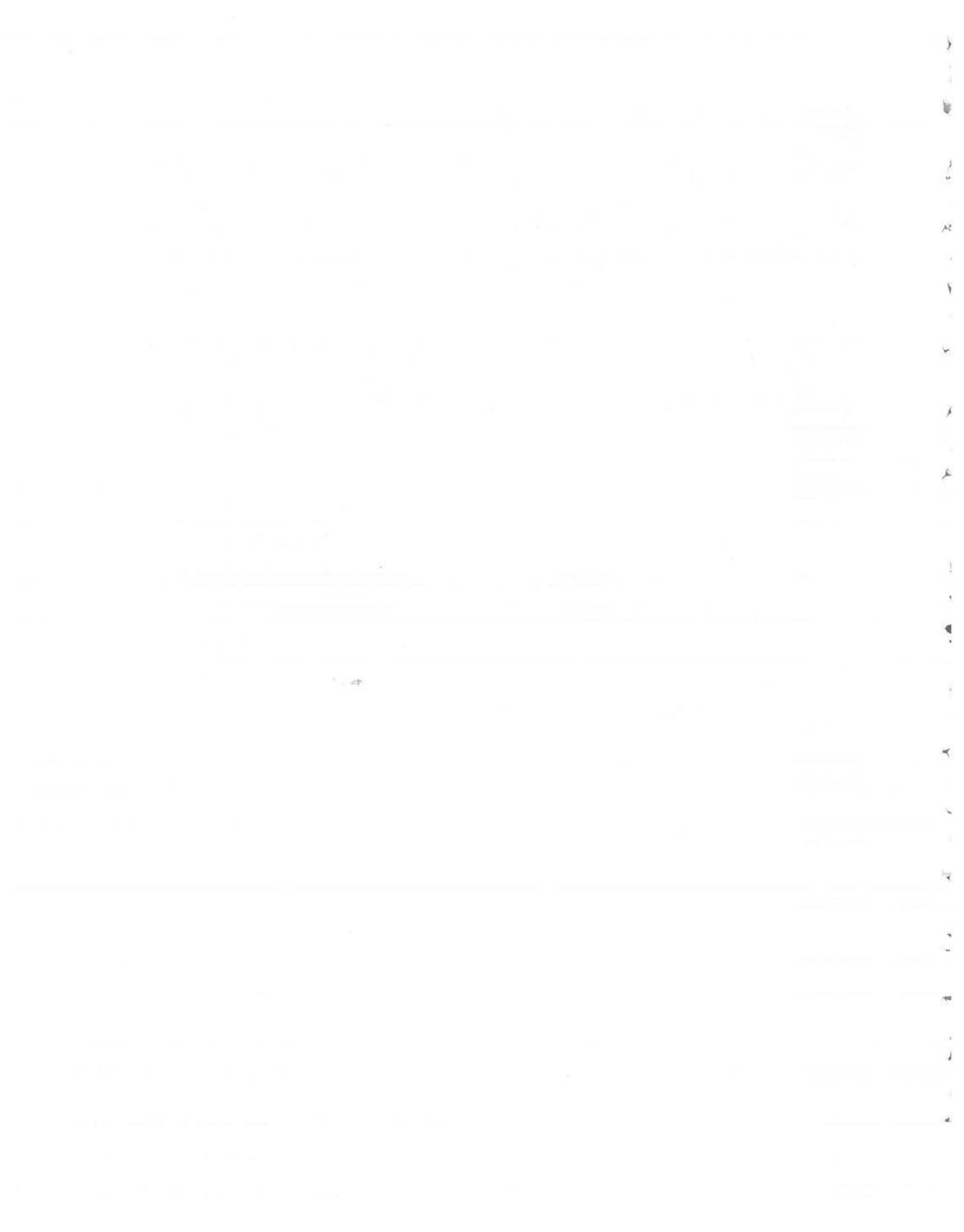


Figure 78. Samples 265, 266, 285, 288 (and vicinity of 259, 268, 286, and 289 not identified). Pre-sampling, cross-sun, photograph AS15-86-11635, looking south.



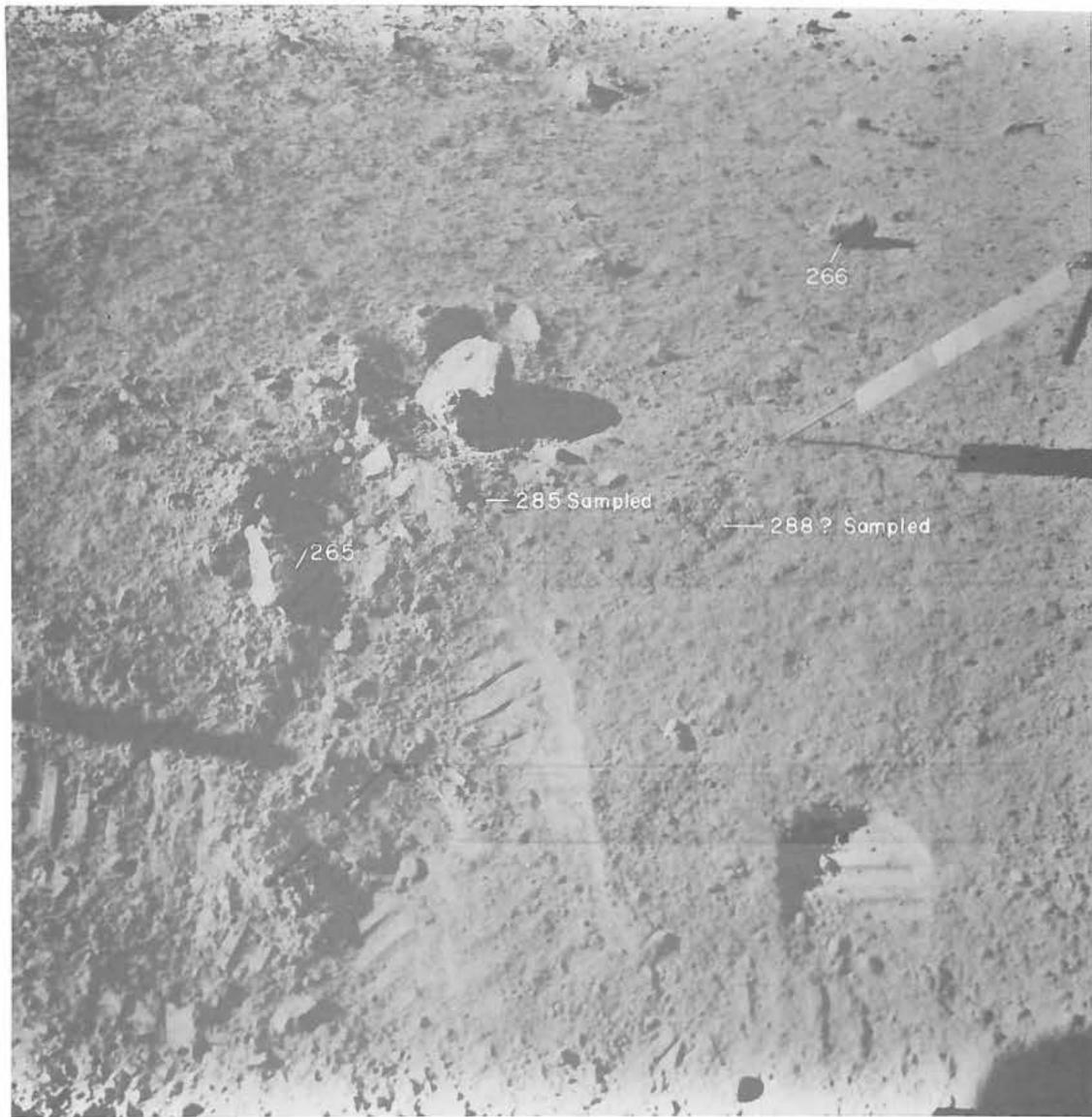


Figure 79. Samples 265 and 266 collected at station 6 from north rim of 12-m crater after rock from which 265, 266 were derived was broken. During sampling, cross-sun, photograph AS15-86-11639, looking south.

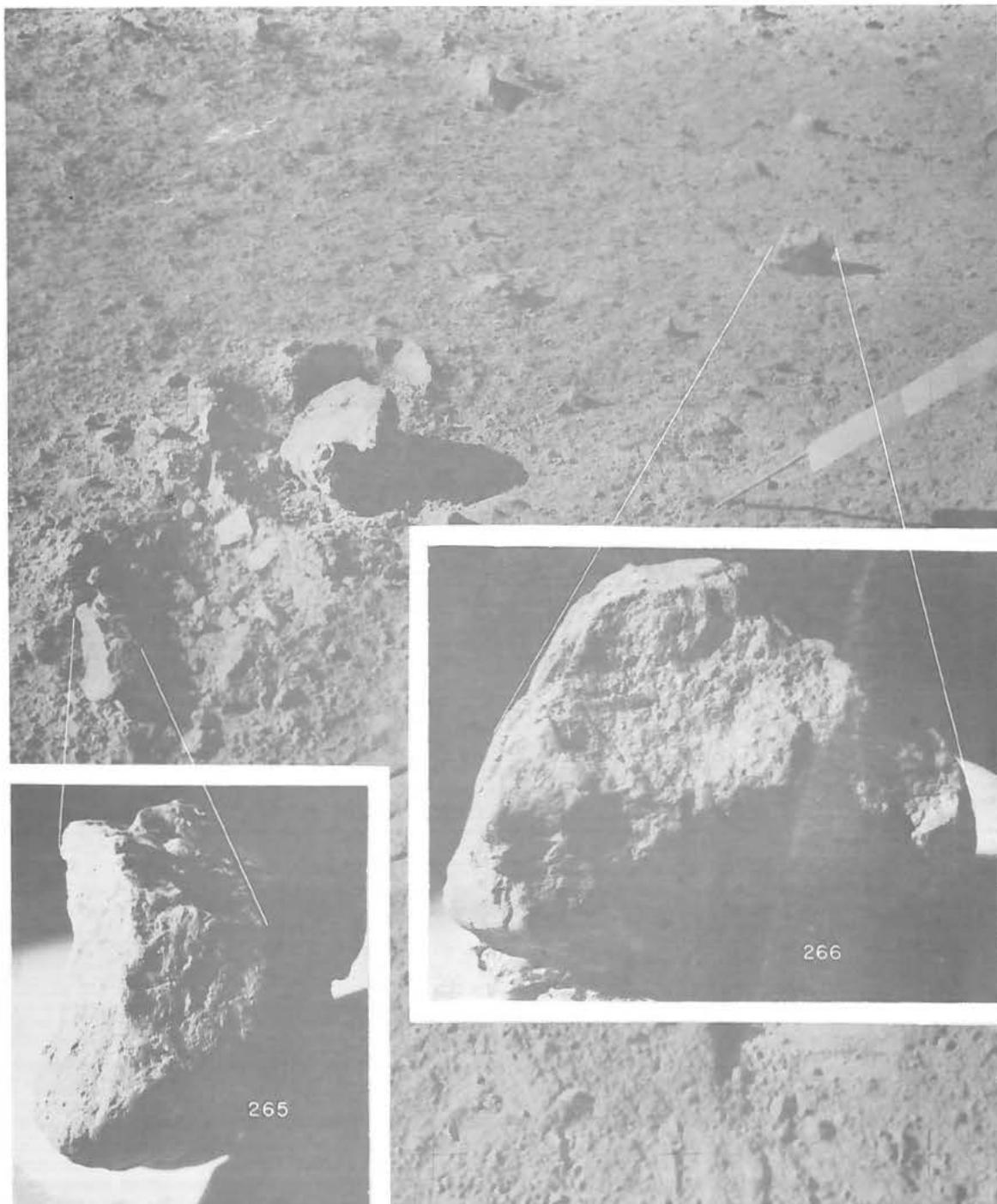


Figure 80. Samples 265 and 266 showing approximate lunar orientation after having been broken and moved, reconstructed in the LRL compared to EVA photograph AS15-86-11639, taken cross-sun, looking south.

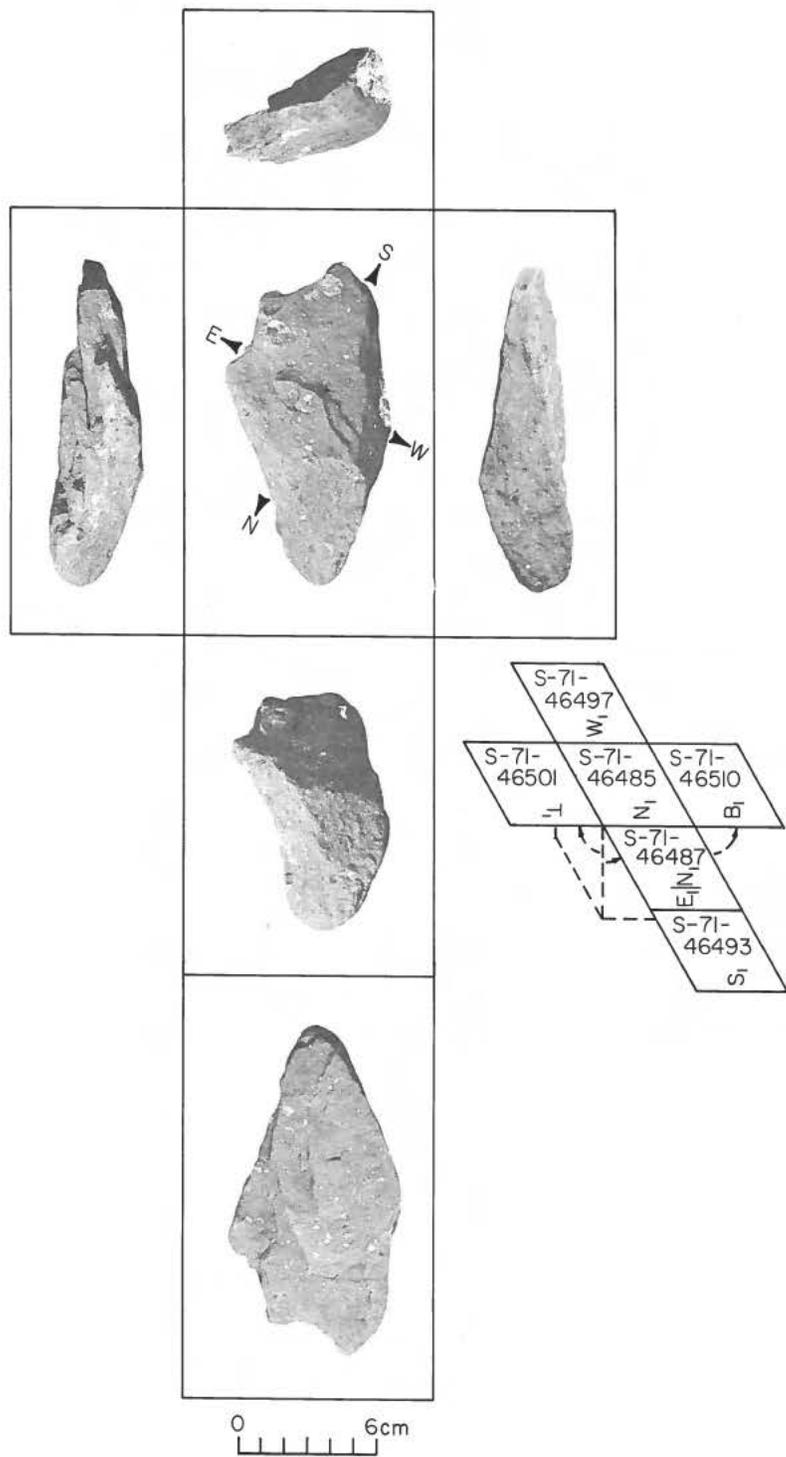
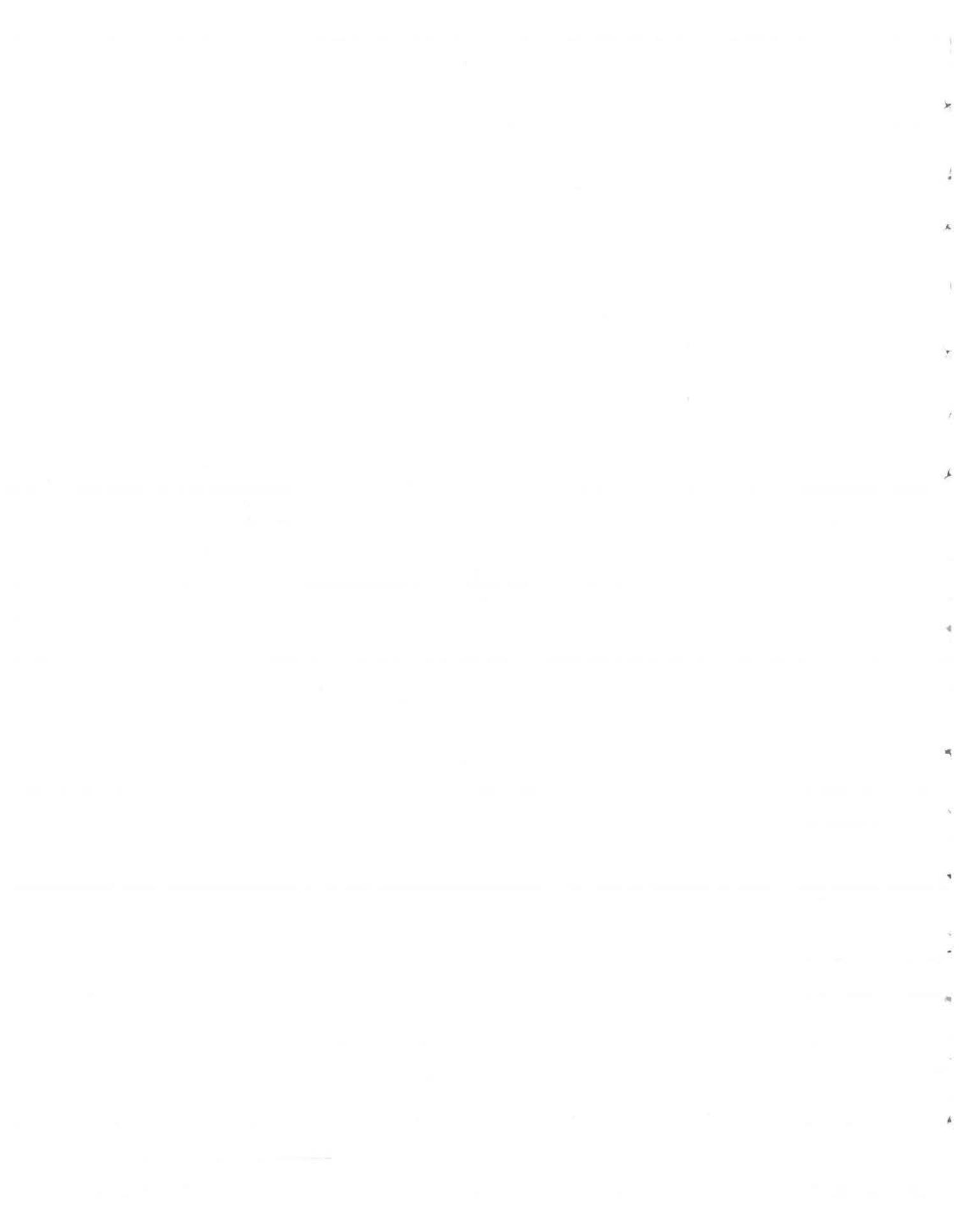


Figure 81. Orthogonal views of sample number 265.



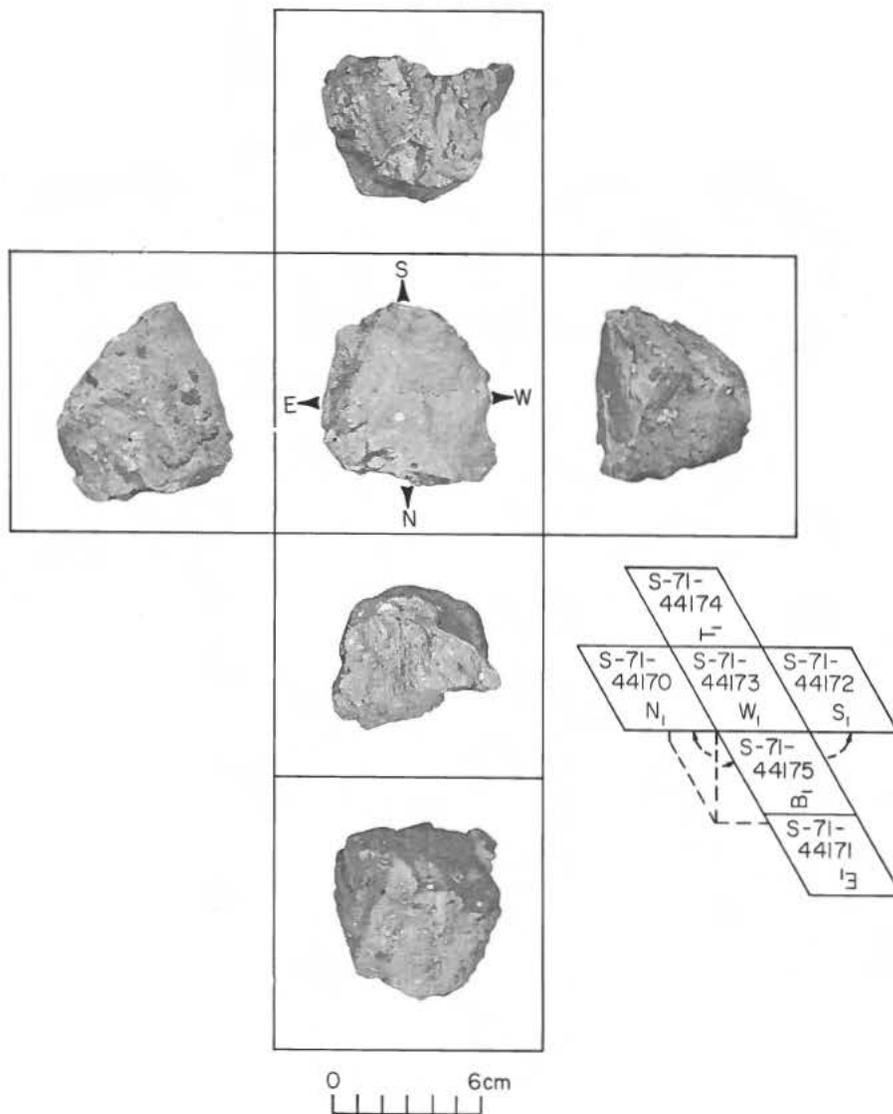


Figure 82. Orthogonal views of sample number 266.

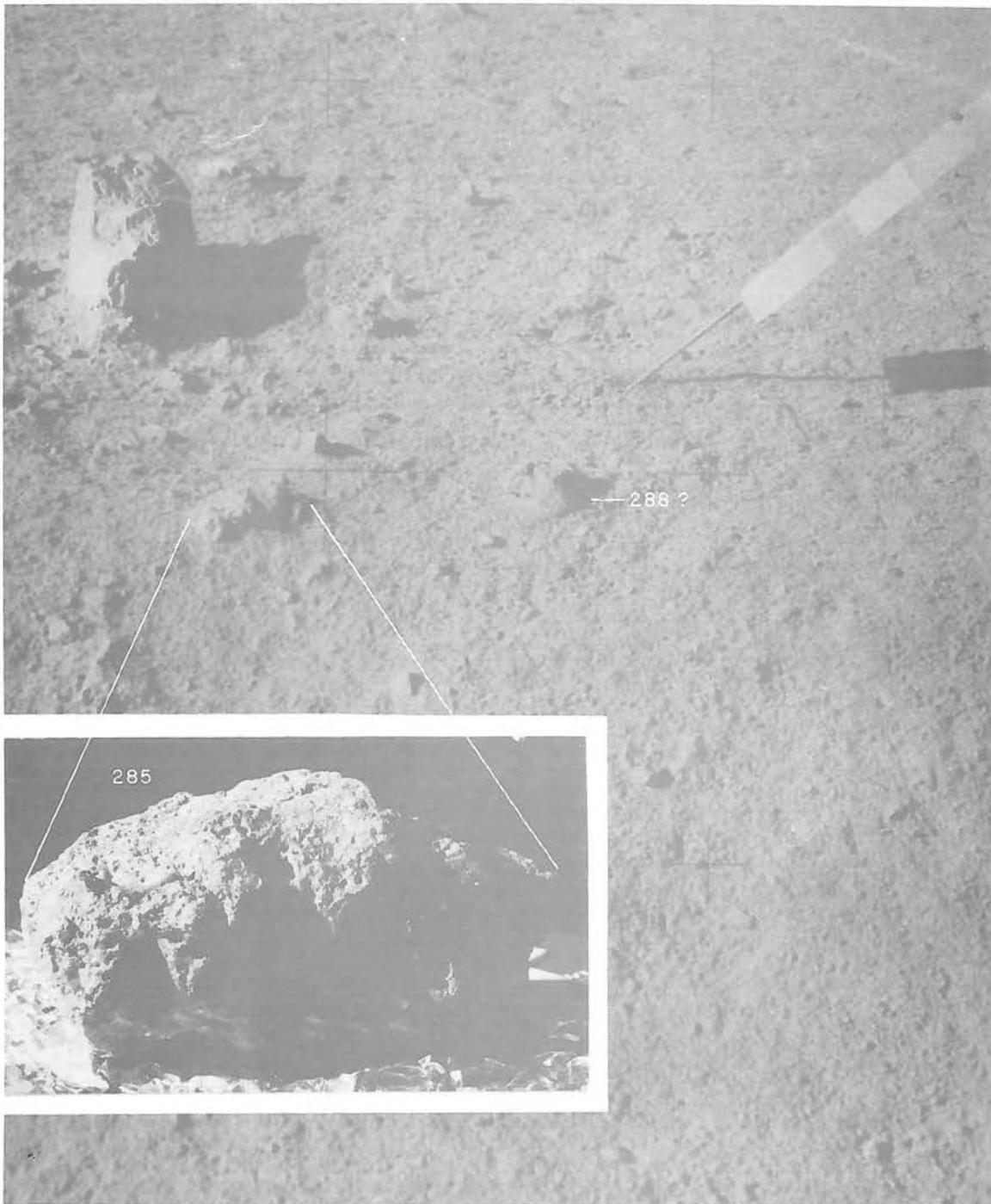


Figure 83. Sample 265 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11630, taken cross-sun, looking south.

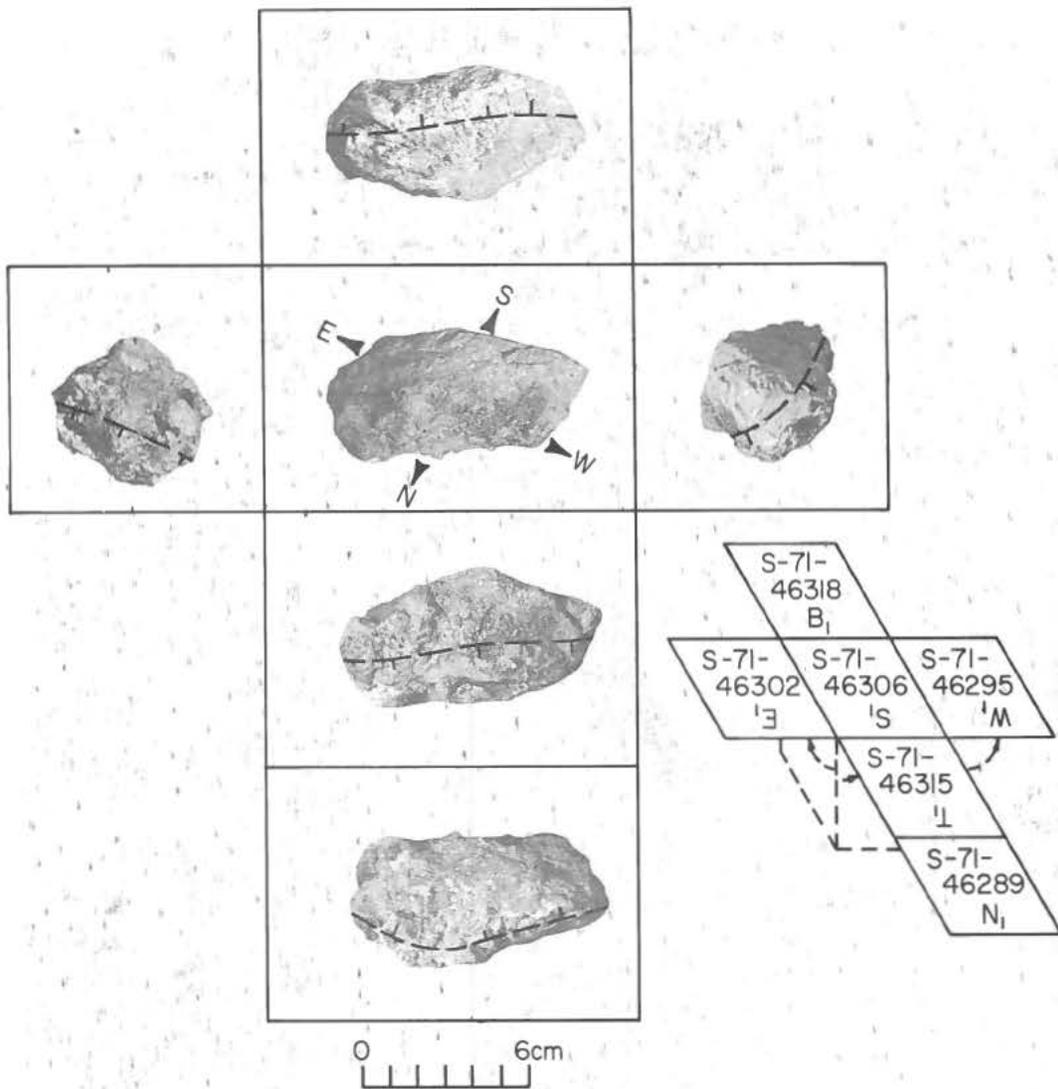


Figure 84. Orthogonal views of sample number 285.

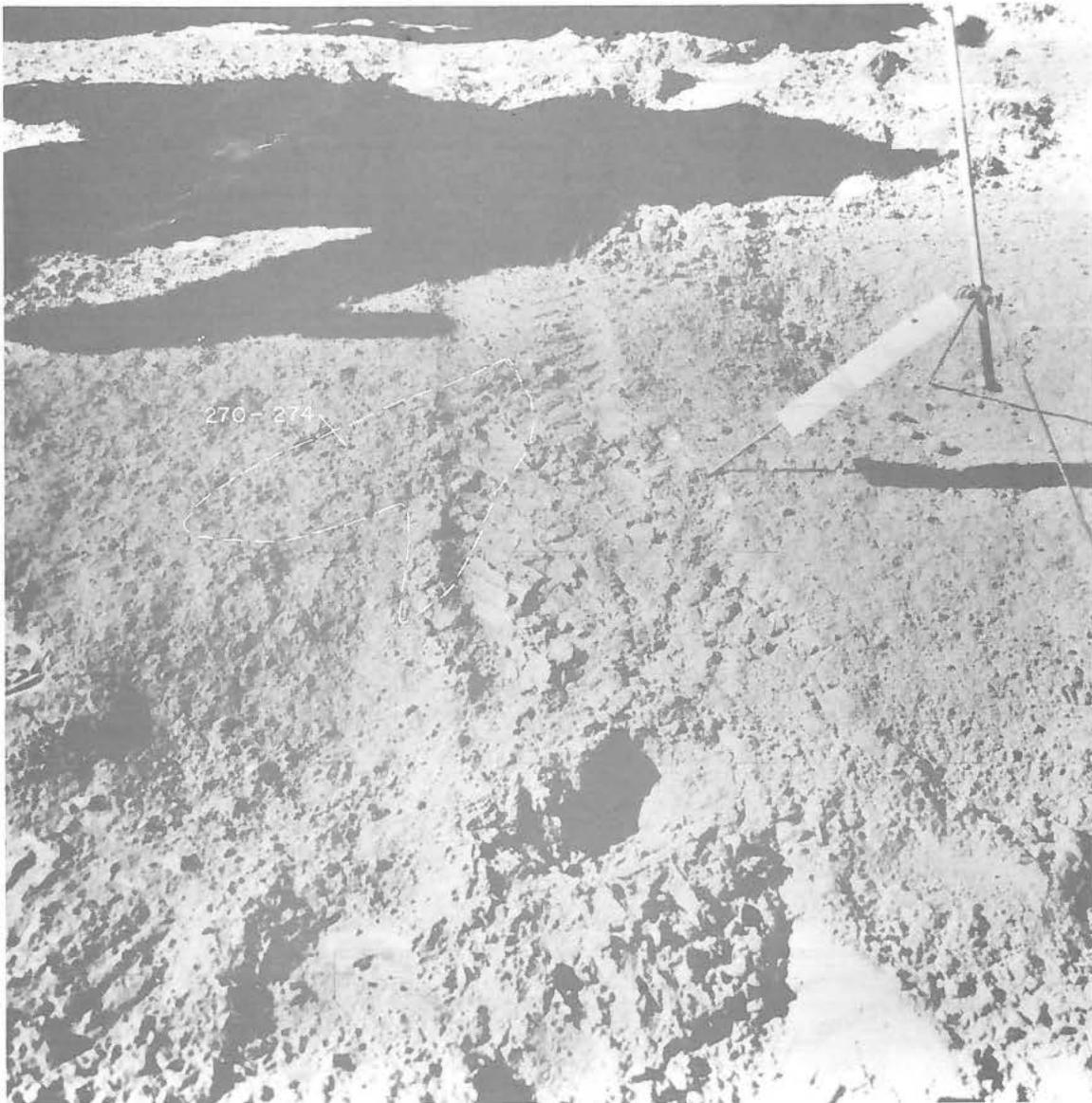


Figure 85. Samples 270-274 collected at station 6 from edge of LRV track. Pre-sampling, cross-sun, photograph AS15-86-11656, looking south.

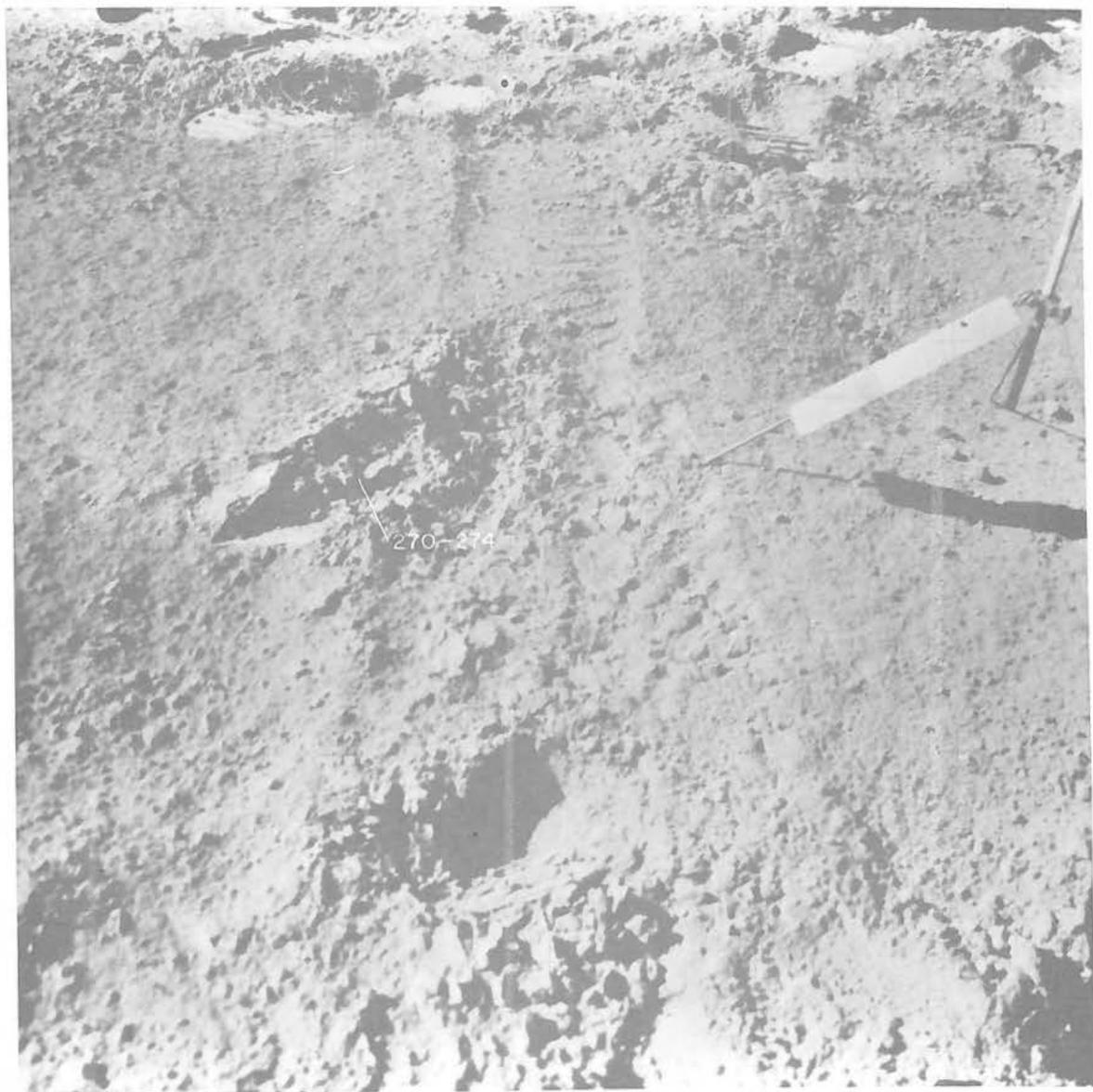


Figure 86. Samples 270-274 collected at station 6 from edge of LRV track. Post-sampling, cross-sun, photograph AS15-86-11657, looking south.



Figure 87. Sample 295 (soil samples 290-294 probably from around rock 295) collected at station 6 from base of Hadley Delta. Pre-sampling, down-sun, photograph AS15-85-11501, looking west.



Figure 88. Samples 295 (and vicinity of 290-294) collected at station 6 from base of Hadley Delta. Pre-sampling, cross-sun, photograph AS15-86-11617, looking north.



Figure 89. Sample 298 collected at station 6 from base of Hadley Delta. Pre-sampling, down-sun, photograph AS15-86-11504, looking west.

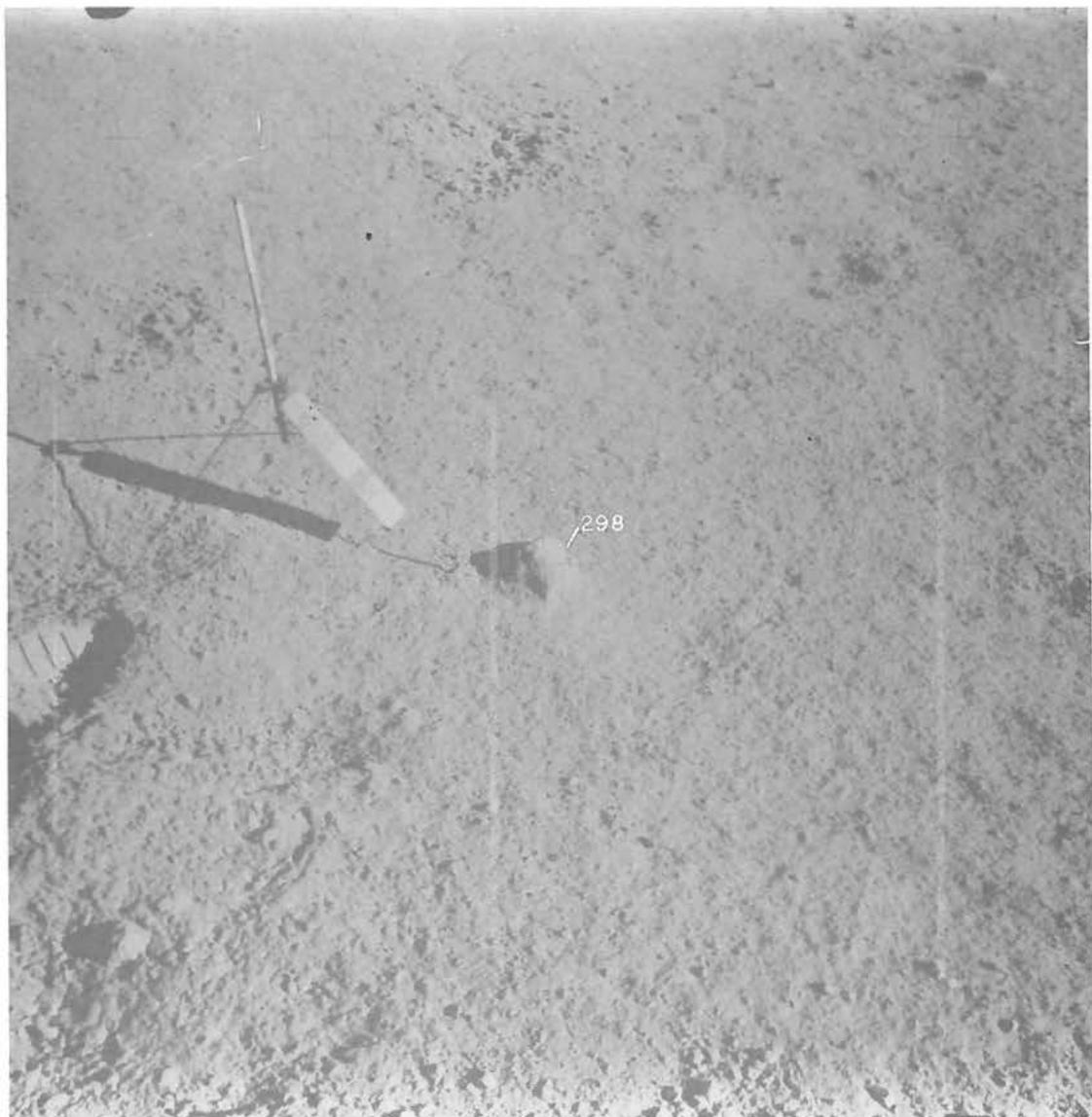


Figure 90. Sample 298 collected at station 6 from base of Hadley delta. Pre-sampling, cross-sun, photograph AS15-86-11622, looking north.

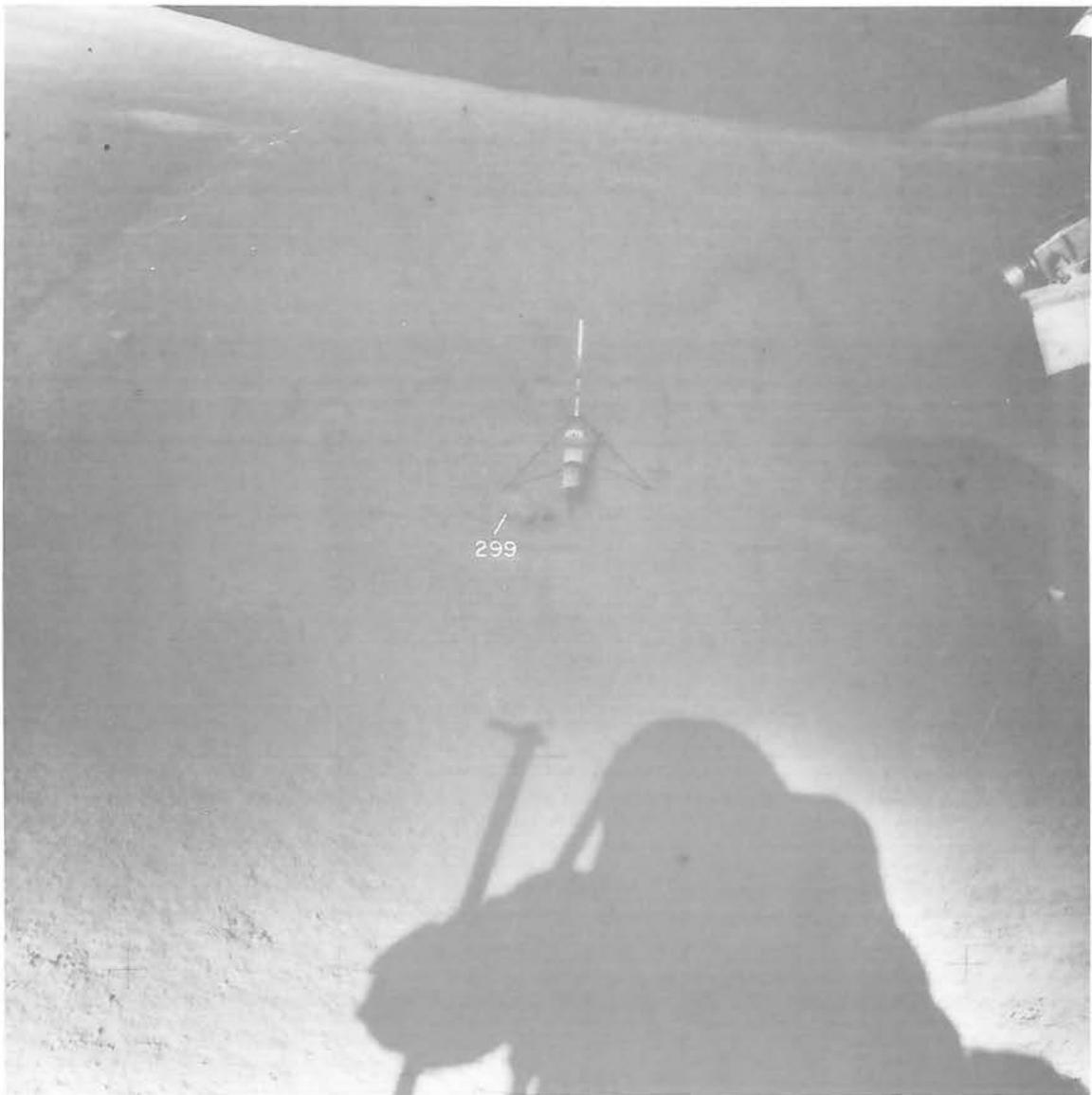


Figure 91. Sample 299 collected at station 6 from base of Hadley delta. Pre-sampling, down-sun photograph, AS15-85-11505, looking west.

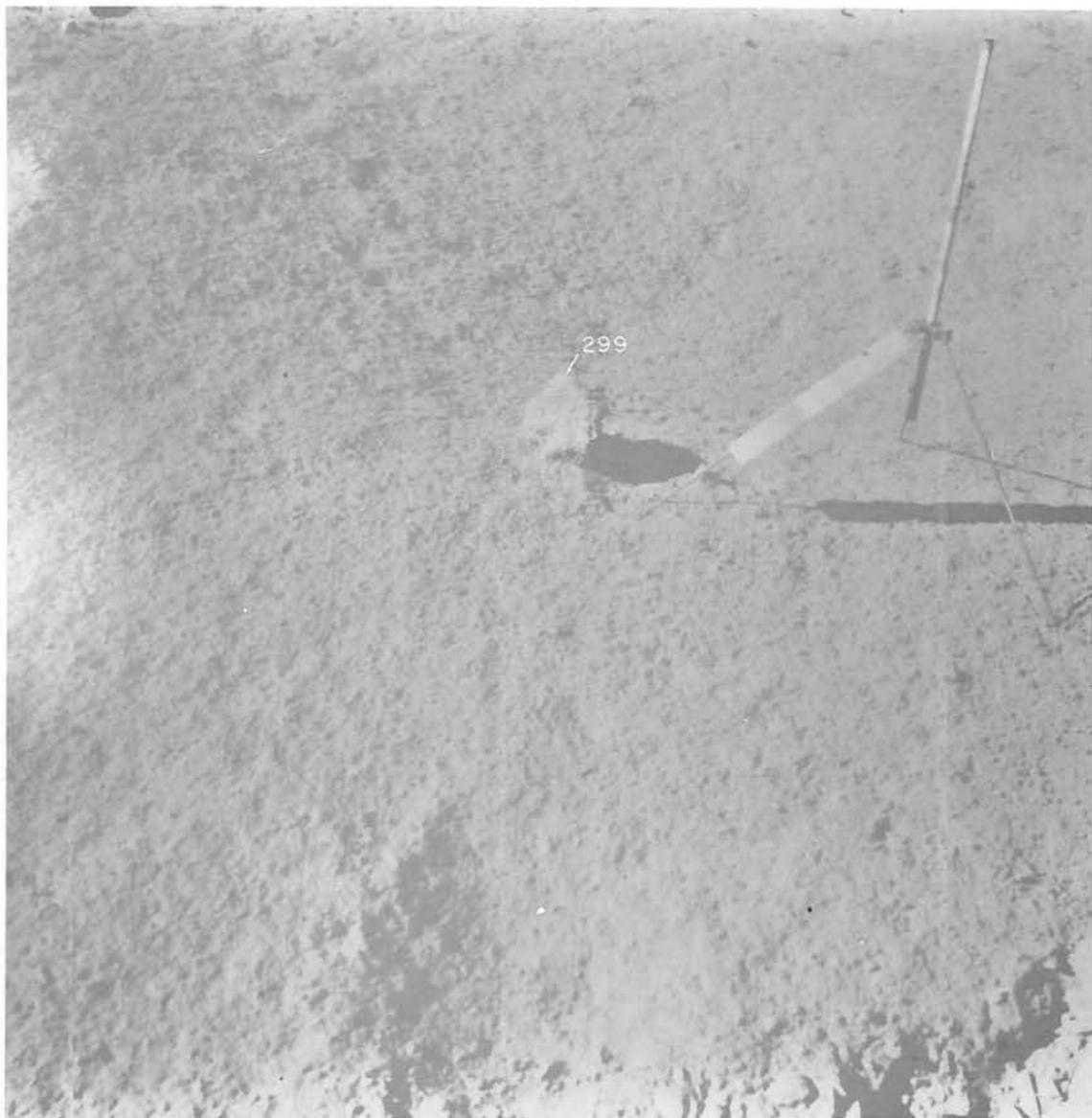
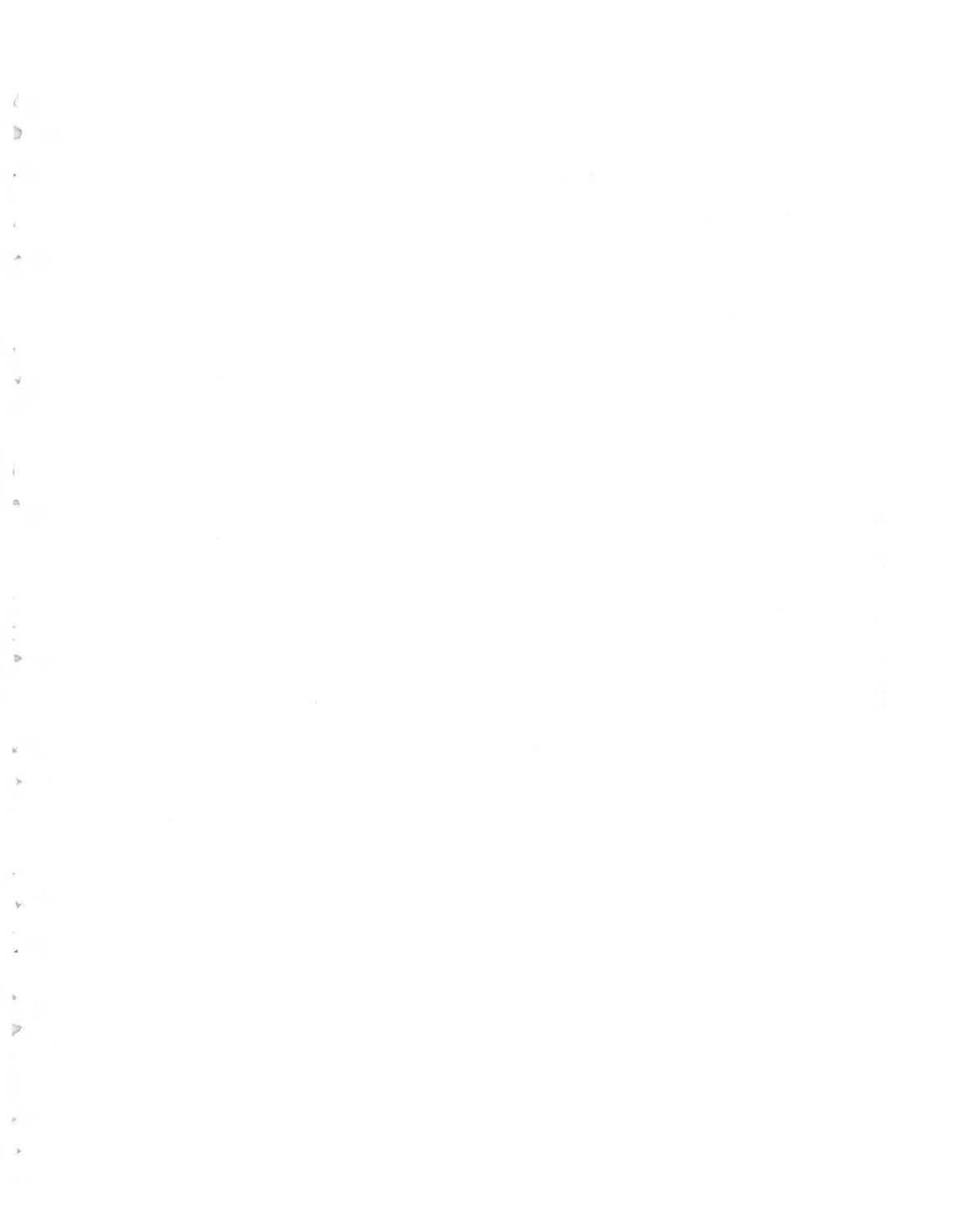


Figure 92. Sample 299 collected at station 6 from base of Hadley delta. Pre-sampling, cross-sun, photograph AS15-86-11624, looking south.



Figure 93. Sample 300-392 collected at station 7 as a comprehensive sample. Pre-sampling, down-sun, photograph AS15-90-12232, looking west.



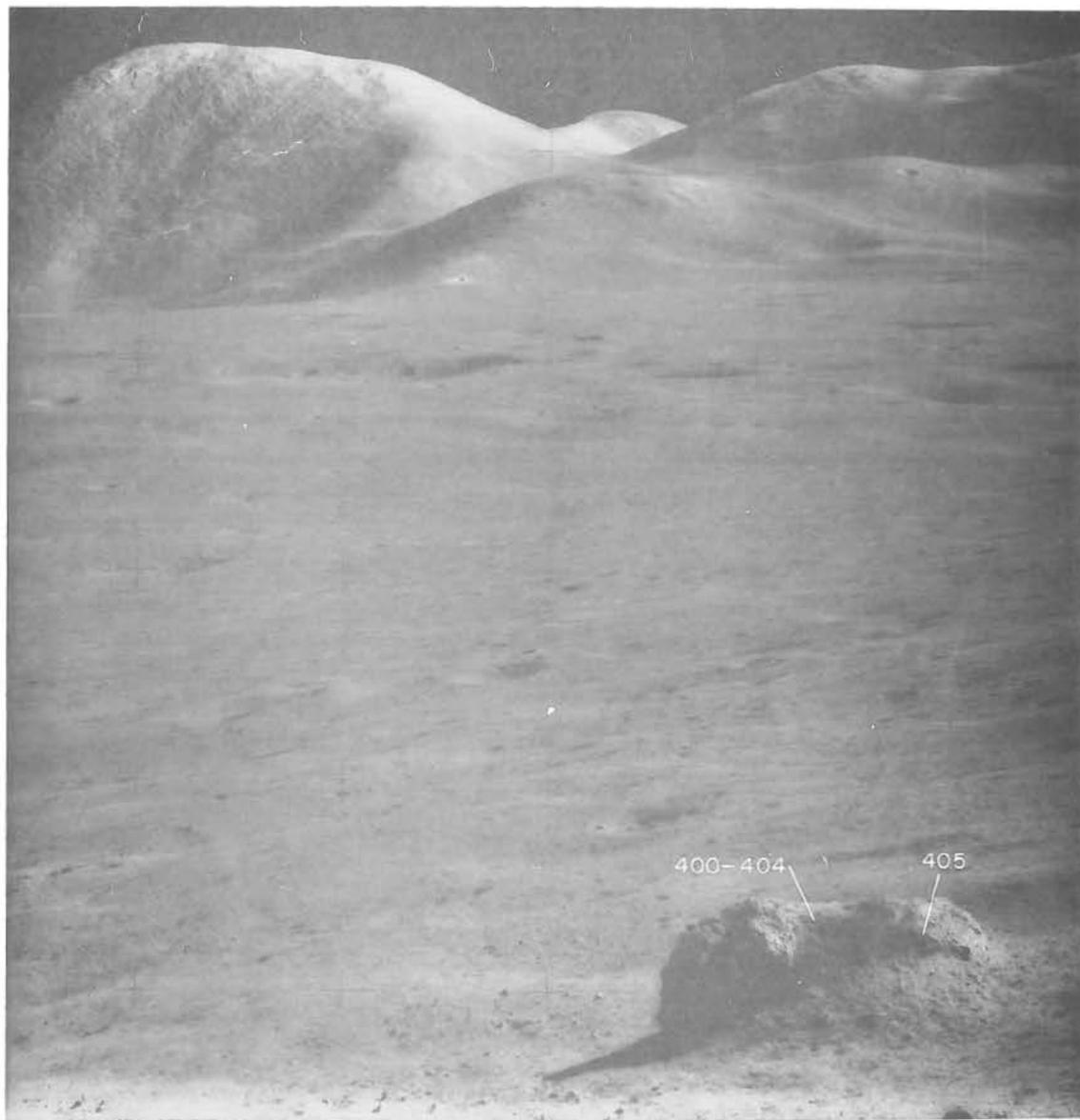


Figure 94. Samples 400-405 collected at station 6a. Pre-sampling, oblique-to-sun, photograph AS15-90-12187, looking northeast.



Figure 95. Samples 400-405 collected at station 6a. Pre-sampling, down-sun, photograph AS15-90-12199, looking west.

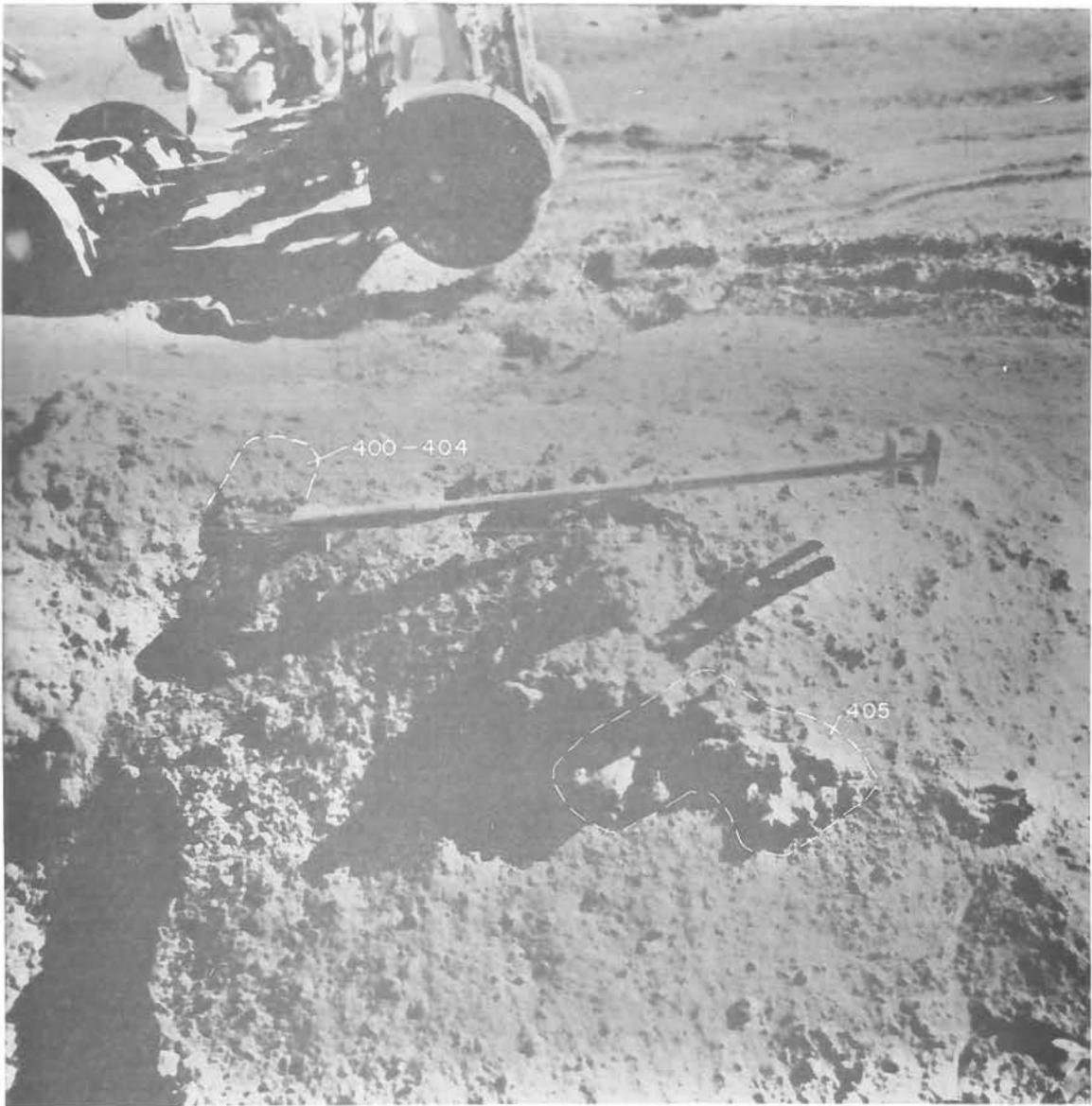


Figure 96. Samples 400-405. Pre-sampling, cross-sun, photograph AS15-86-11658, looking north.

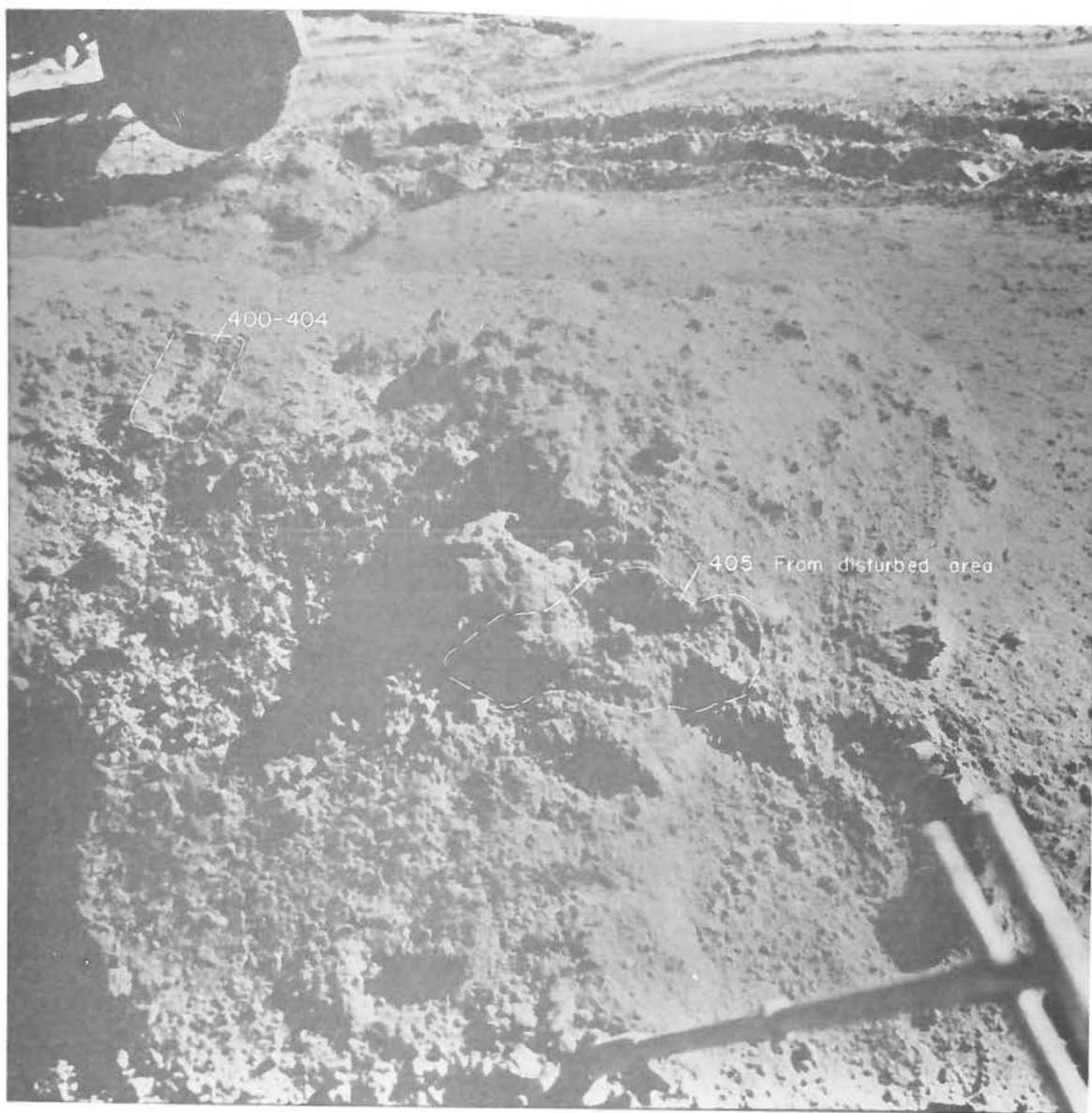


Figure 97. Samples 400-405. Post-sampling, cross-sun, photograph AS15-86-11661, looking north.

[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the paper. The text is too light to transcribe accurately.]



Figure 98. Samples 410-414, 417-419 collected at station 7 from rim of Spur crater. Pre-sampling, down-sun, photograph AS15-90-12223, looking west.

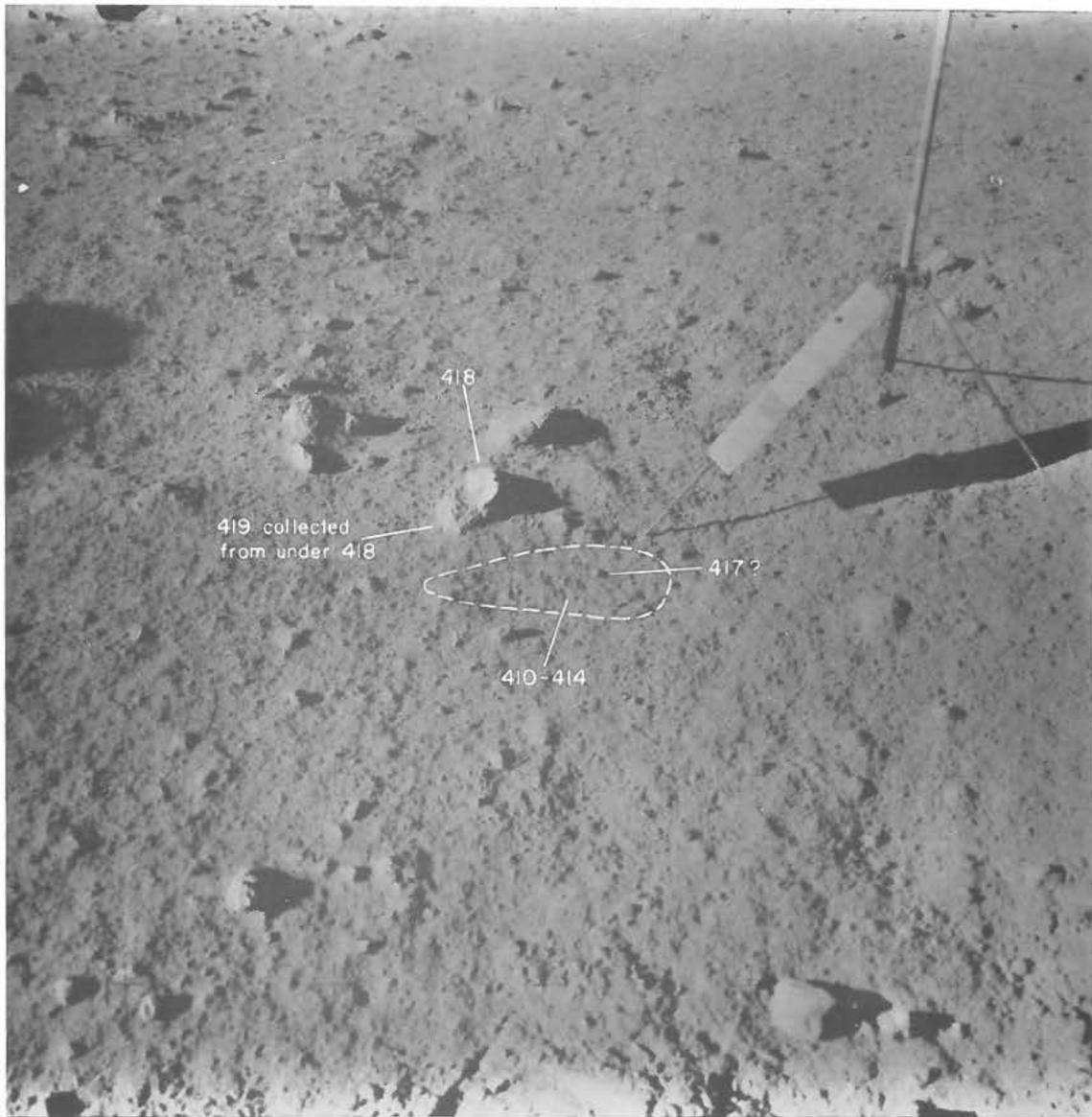


Figure 99. Samples 410-414, 417-419 collected at station 7 from rim of Spur crater. Post-sampling, cross-sun, photograph AS15-86-11663, looking south.



Figure 100. Samples 410-414, 417-419 collected at station 7 from rim of Spur crater. Post-sampling, cross-sun, photograph AS15-86-11664, looking south.

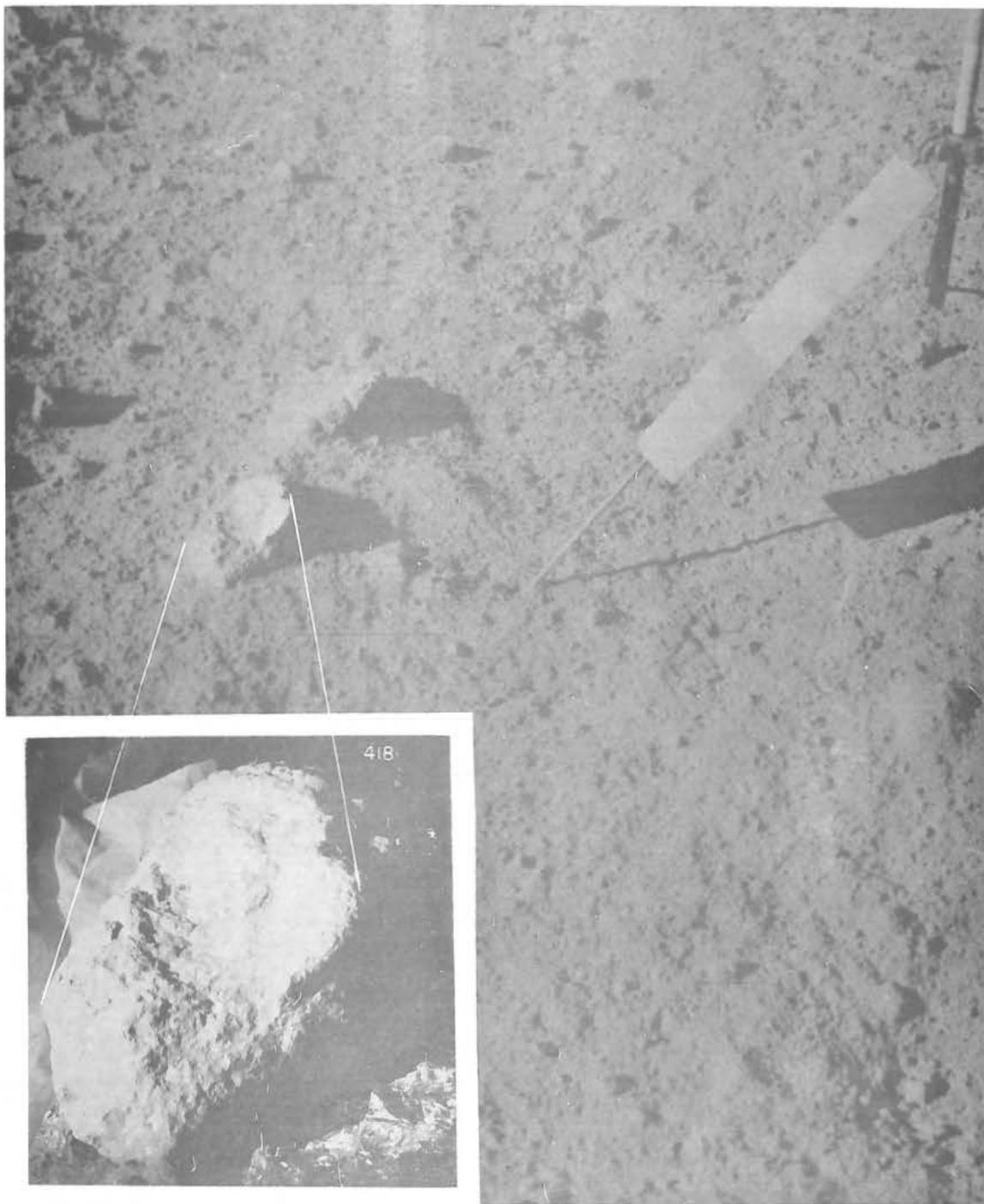


Figure 101. Sample 418 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-88-11663, taken cross-sun, looking south.

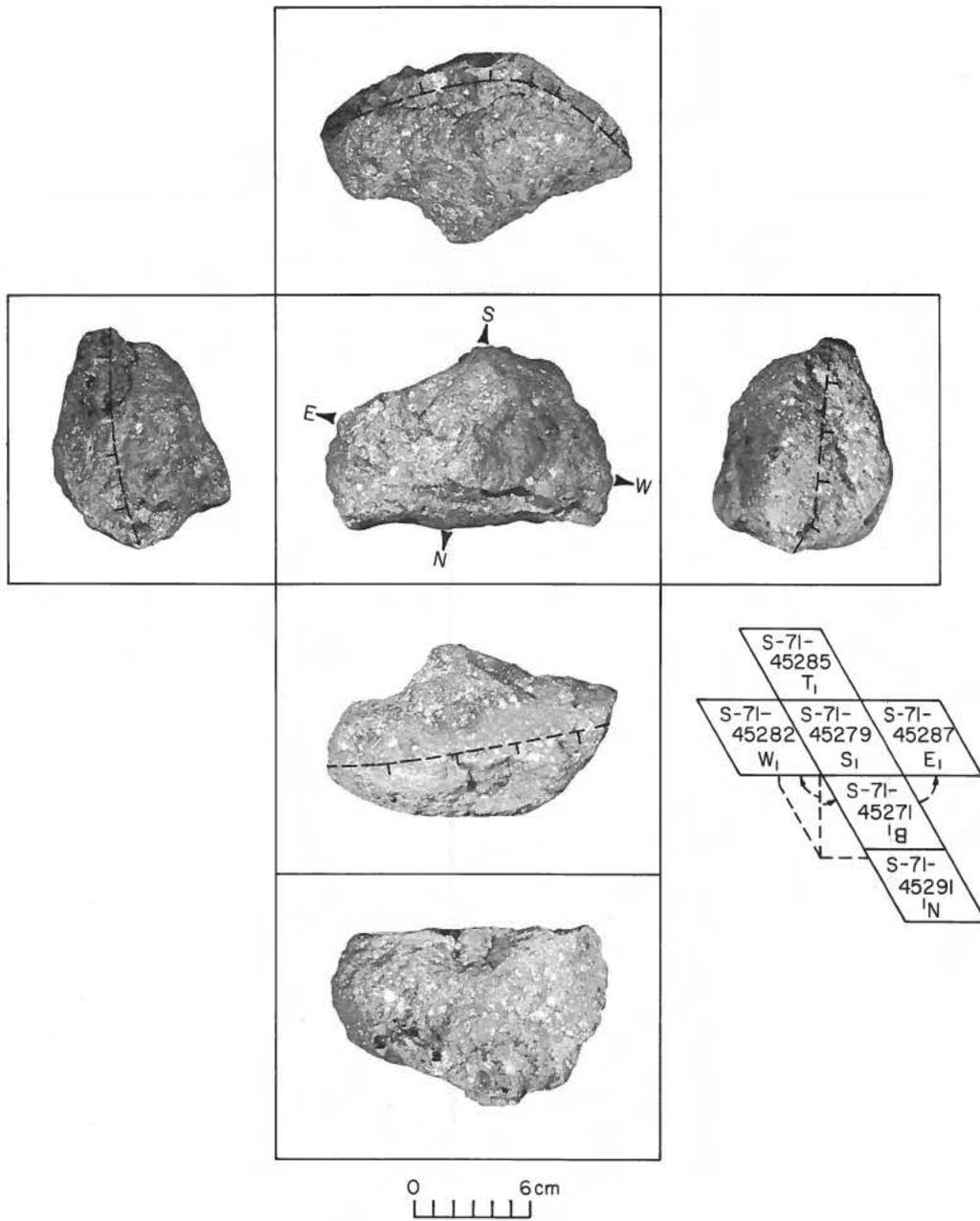


Figure 102. Orthogonal views of sample number 418.



Figure 103. Samples 415; 431-435 collected at station 7 from rim of Spur crater. Pre-sampling, down-sun, photograph AS15-90-12227, looking west.

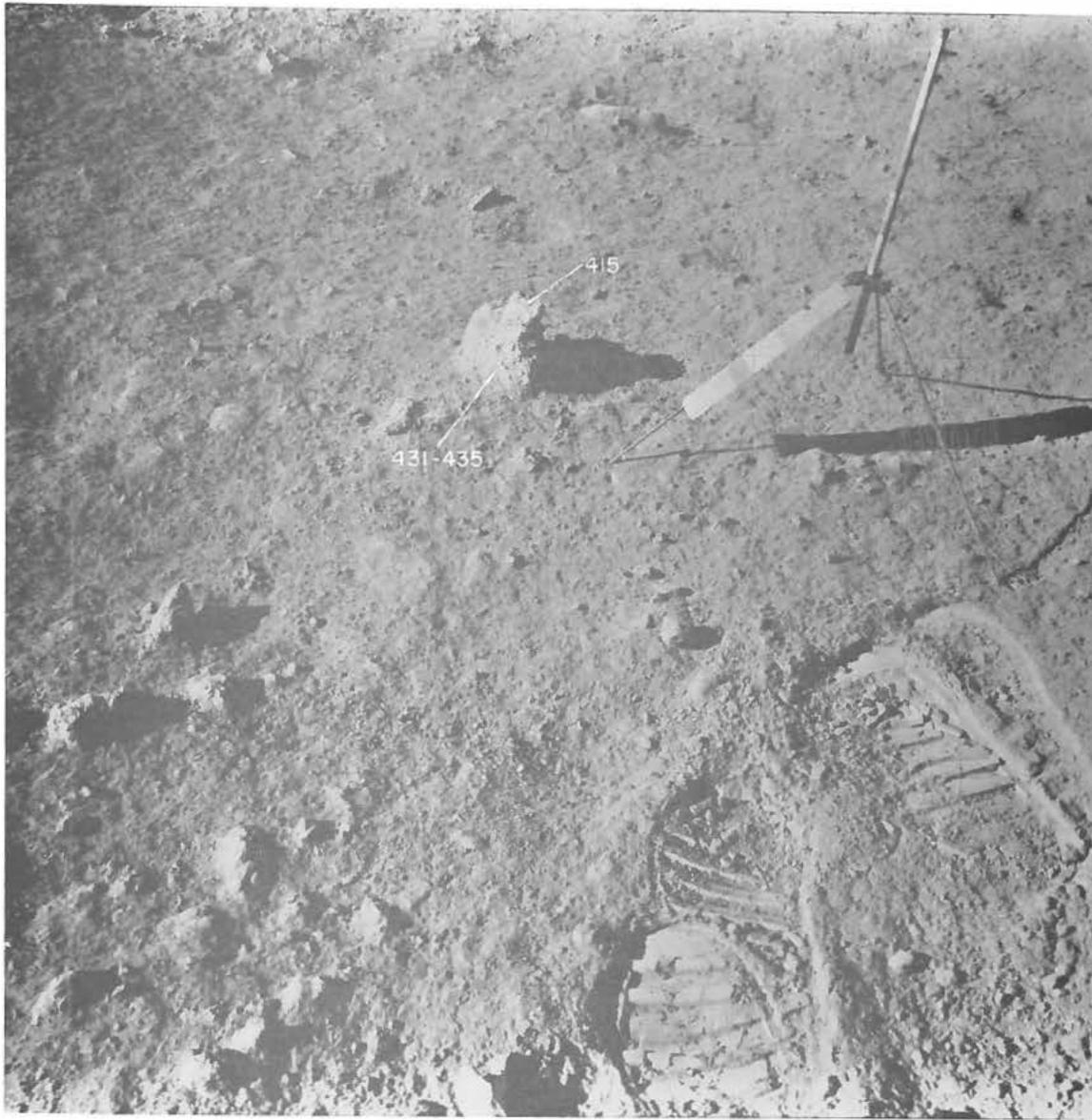


Figure 104. Samples 415; 431-435 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun, photograph AS15-86-11670, looking south.

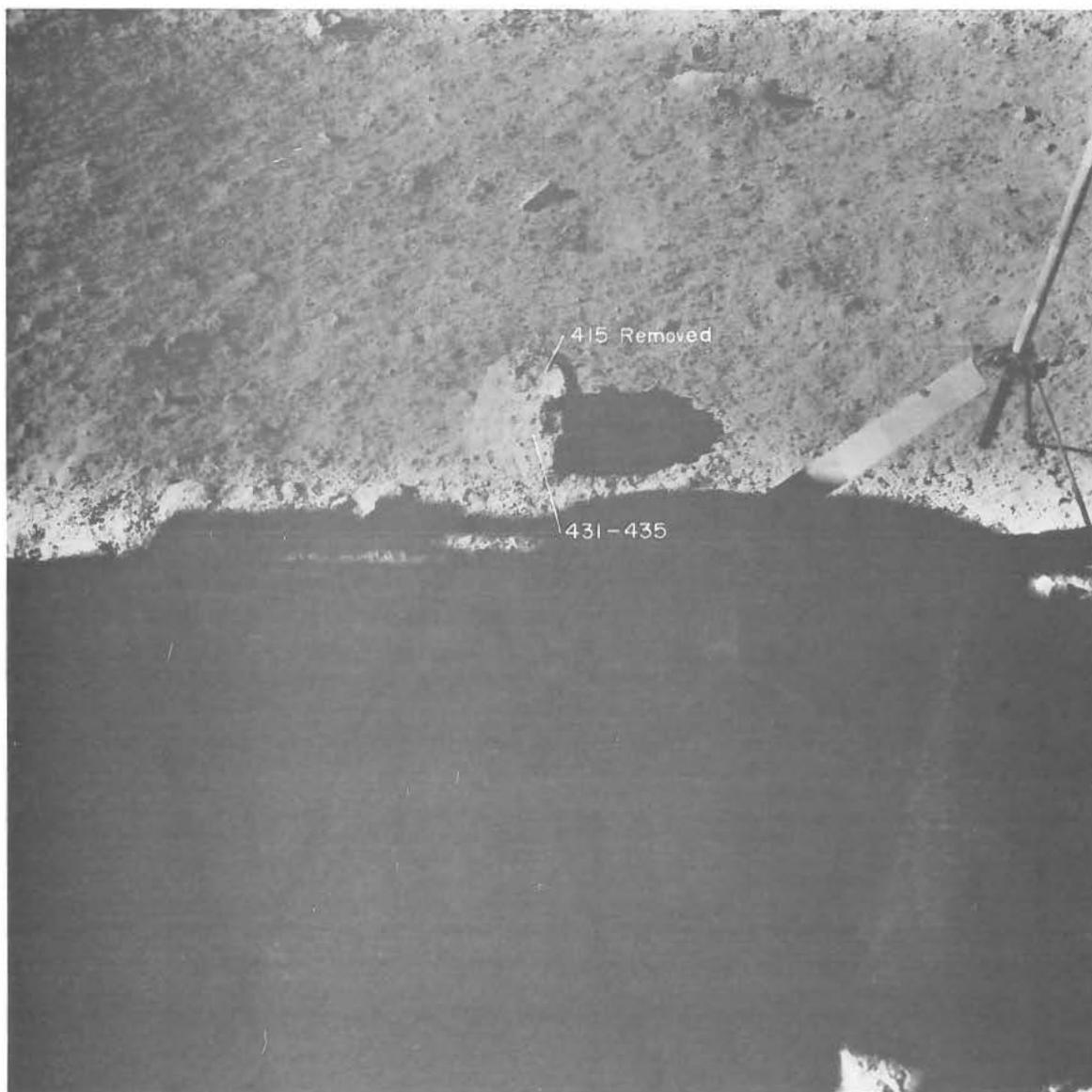


Figure 111. Samples 431-434, 435 collected at station 7 from rim of Spur crater. During sampling, cross-sun, photograph AS15-86-11673, looking south.

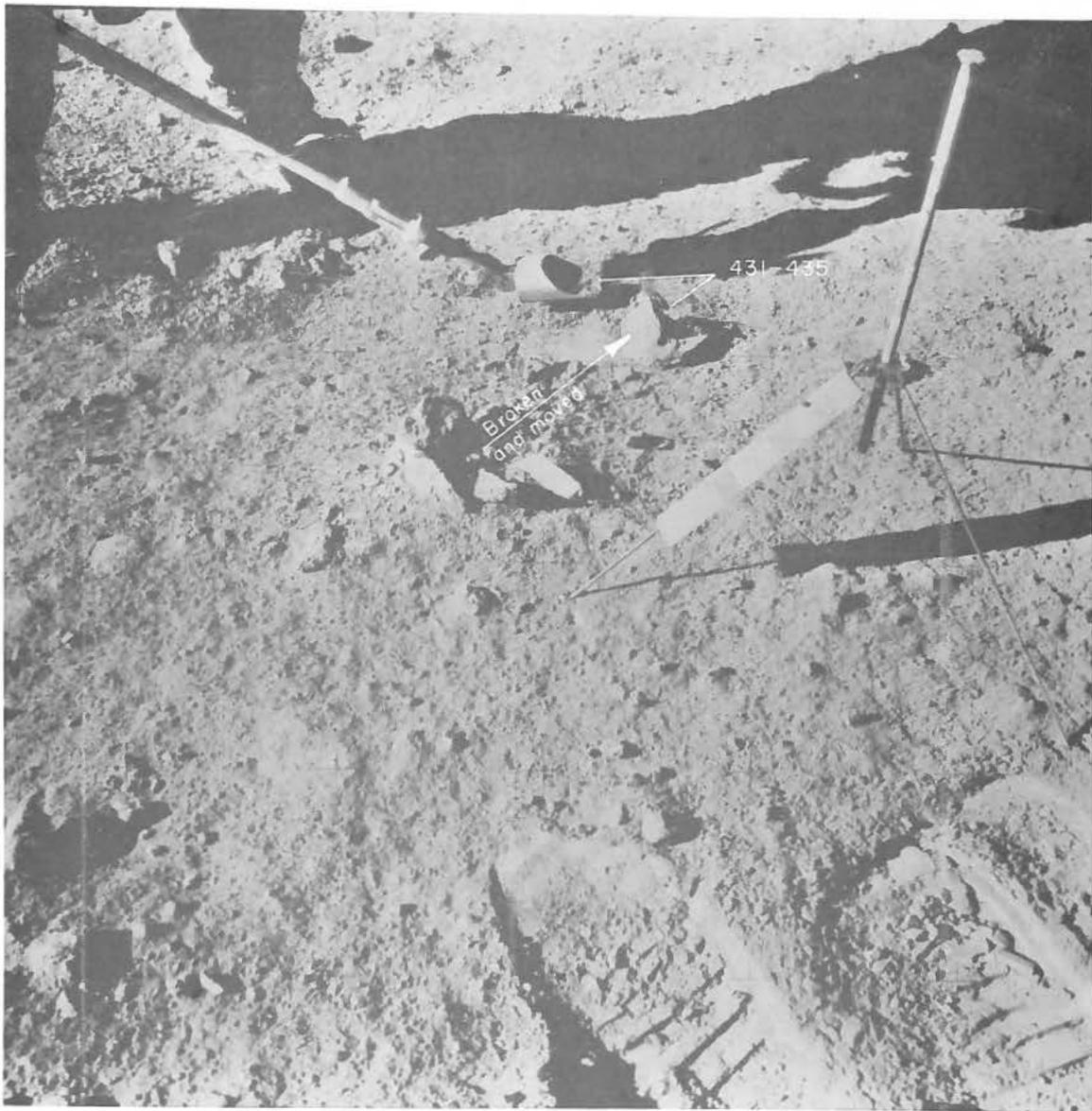


Figure 112. Samples 431-434, 435 (clod of poorly indurated breccia from which sample 415 was collected), collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun, photograph AS15-86-11672, looking south.

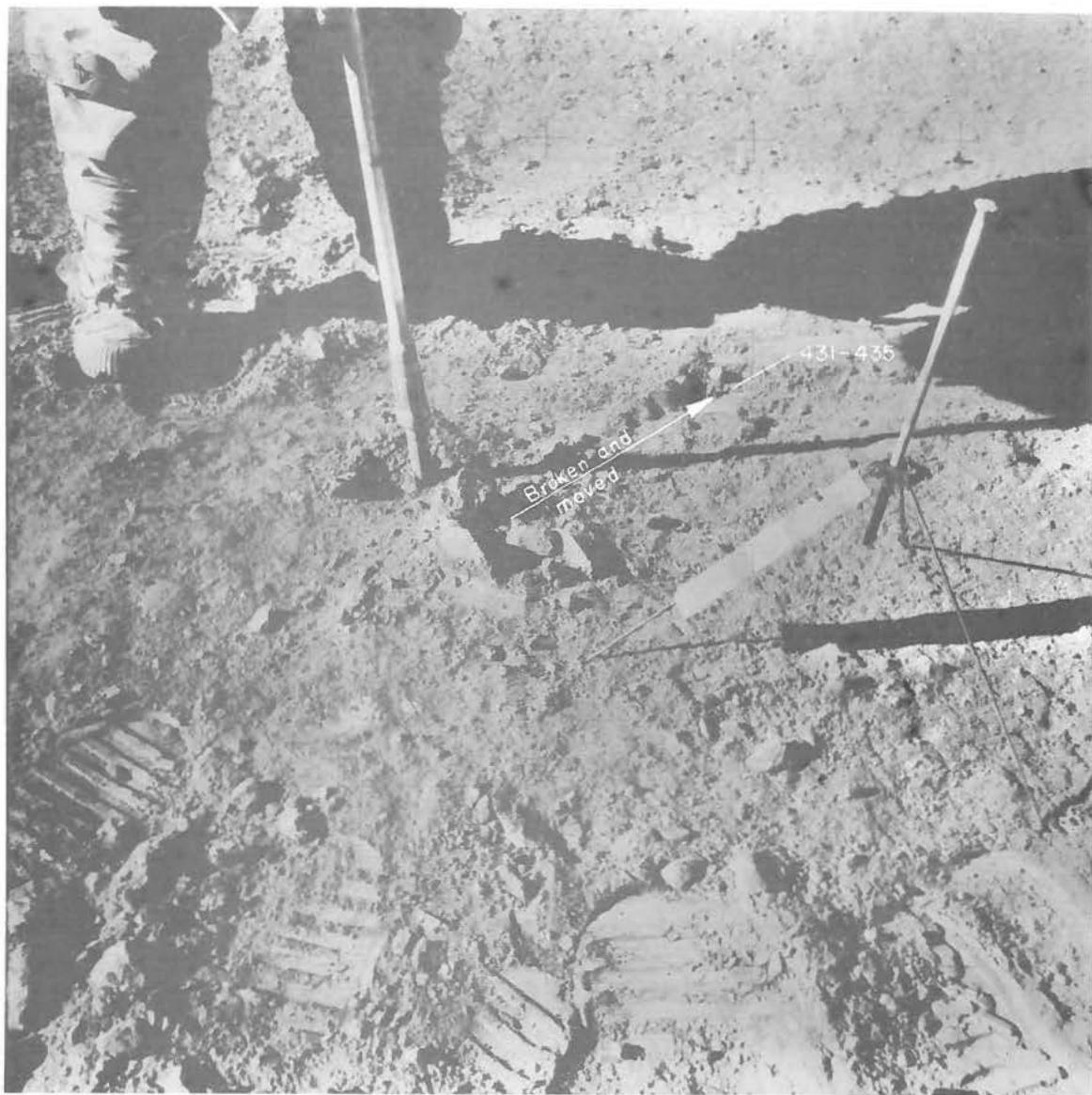


Figure 113. Samples 431-434, 435 collected at station 7 from rim of Spur crater. Post-sampling, cross-sun, photograph AS15-86-11674, looking south.

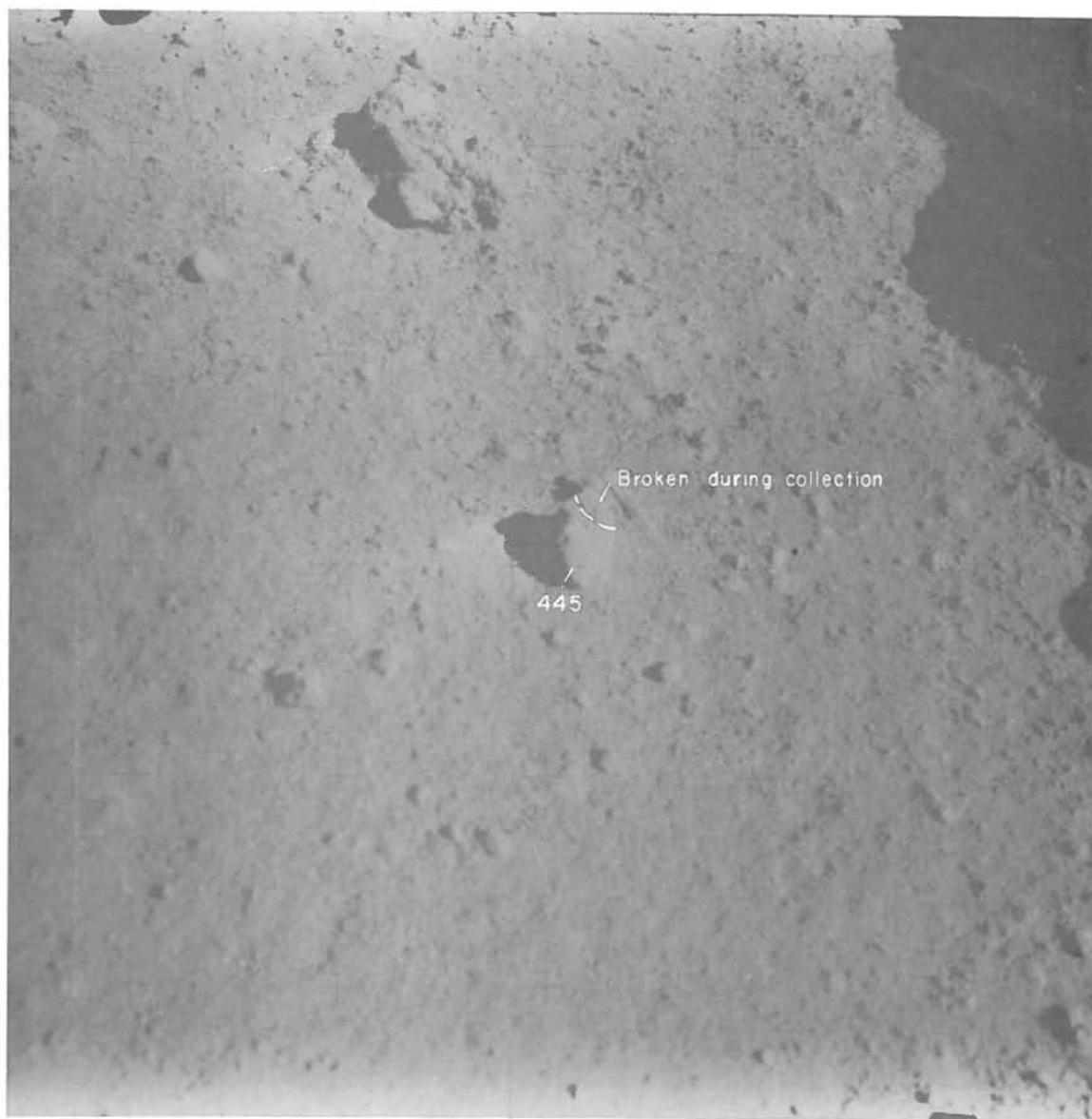


Figure 114. Sample 445 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun, photograph AS15-86-11691, looking north.

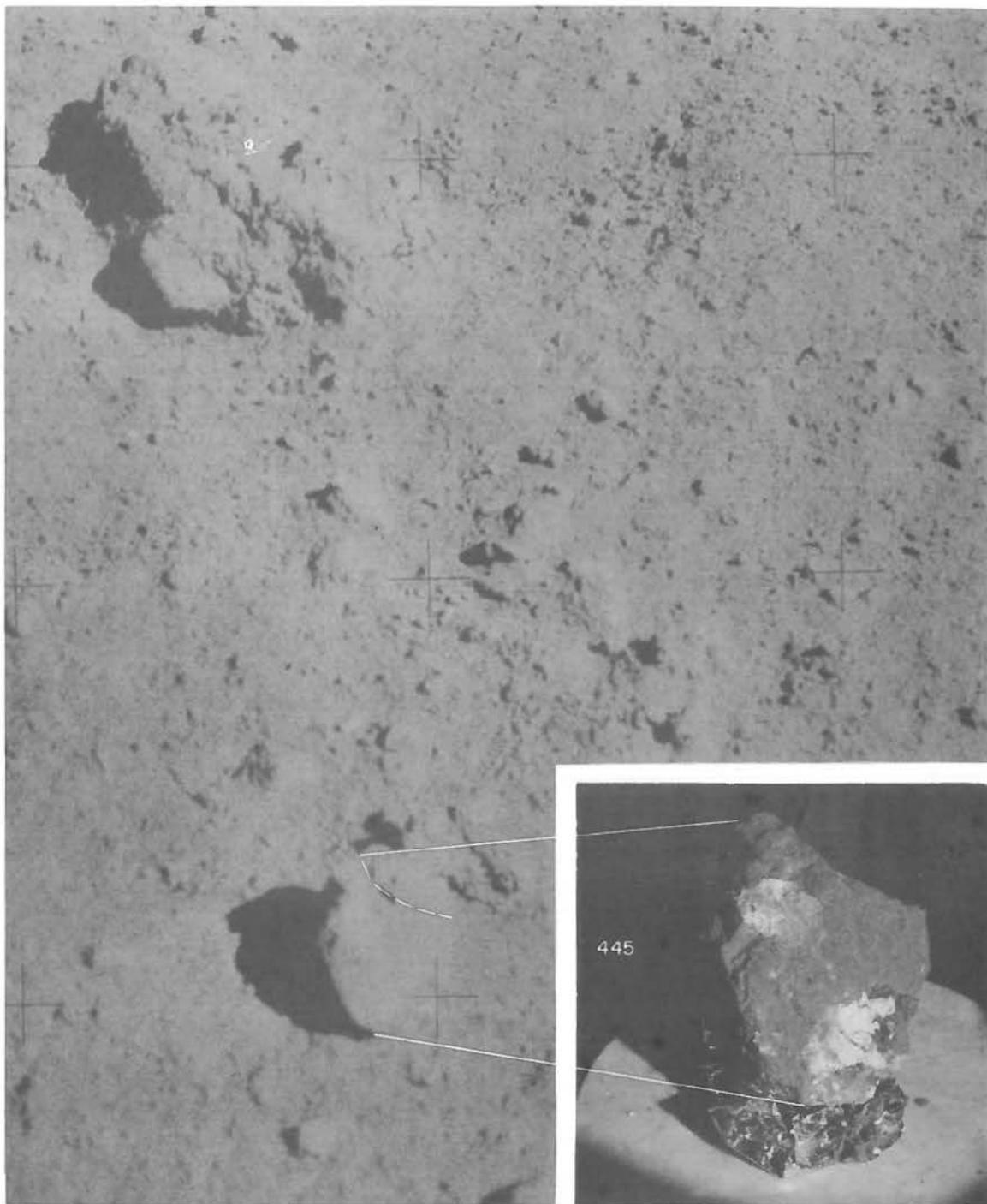


Figure 115. Sample 445 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11690, taken cross-sun, looking north.

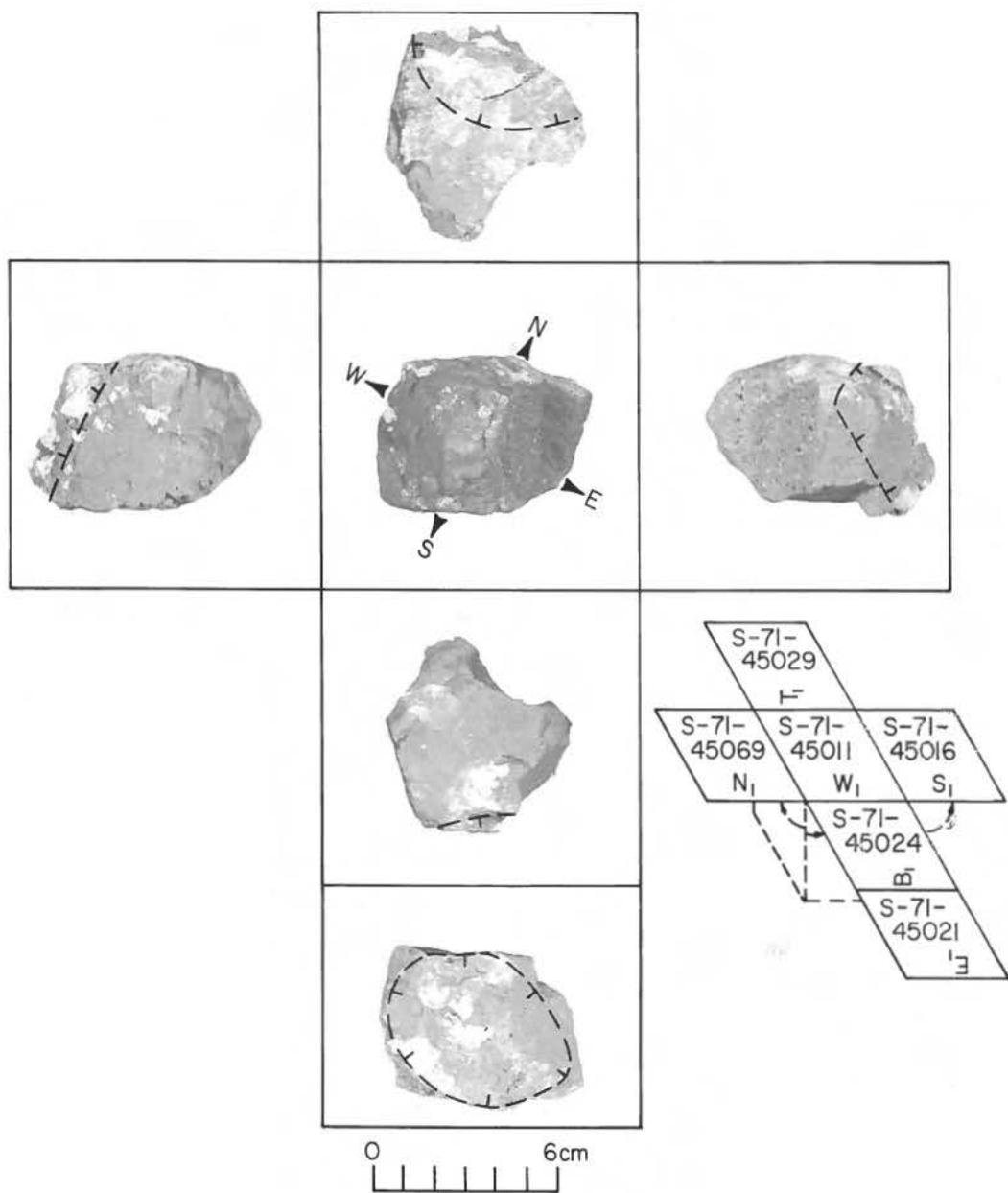


Figure 116. Orthogonal views of sample number 445.



Figure 117. Sample 455 (broke apart) collected at station 7 from rim of Spur crater. Pre-sampling, down-sun, photograph AS15-90-12229, looking west.



Figure 118. Sample 455 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun photograph AS15-86-11675, looking south.







Figure 119. Sample 459 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun photograph AS15-90-12232, looking south.



Figure 120. Sample 459 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun photograph AS15-90-12232, looking south.

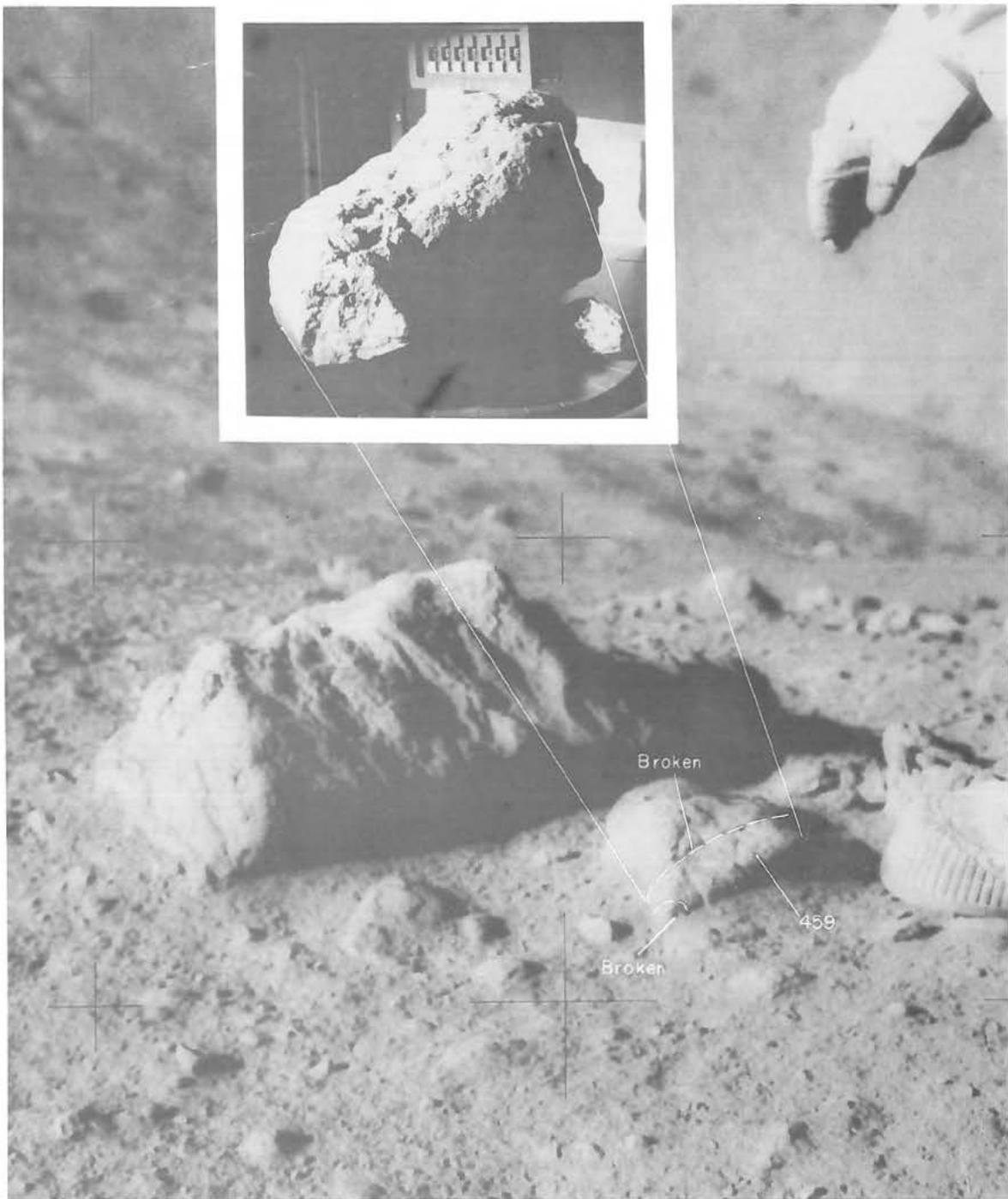


Figure 121. Sample 459 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-90-12236, taken cross-sun, looking south. The identification and orientation as shown are tentative; the viewing angle in the LRL photograph (inset) appears to be much lower than the viewing angle to sample 459 on the surface, which probably explains the difference in the profiles of the sample.



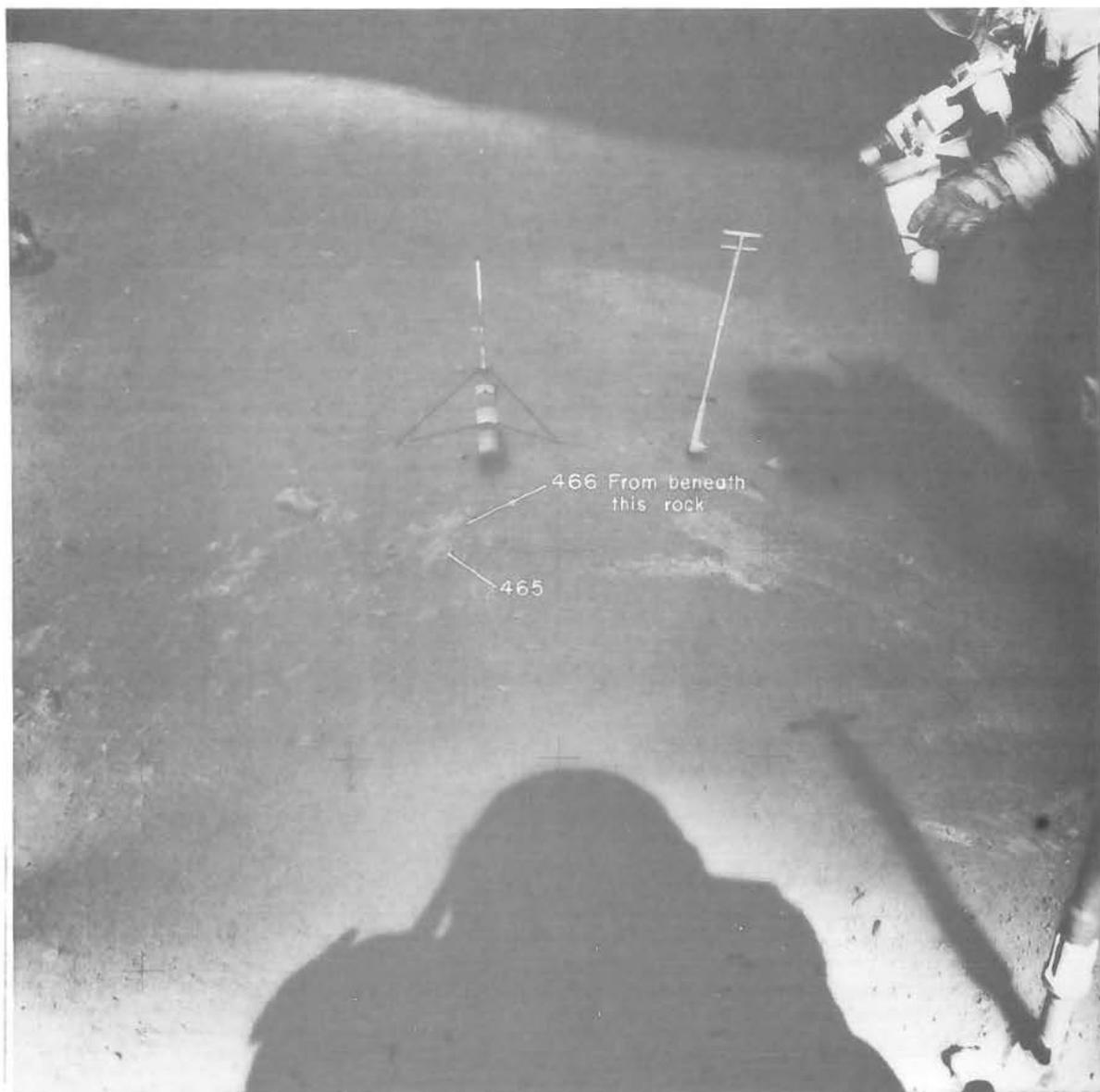


Figure 123. Sample 465 collected at station 7 from the rim of Spur crater. Pre-sampling, down-sun photograph AS15-90-12230, looking west.



Figure 124. Sample 465 collected at station 7 from rim of Spur crater. Pre-sampling, cross-sun photograph AS15-86-11678, looking south.

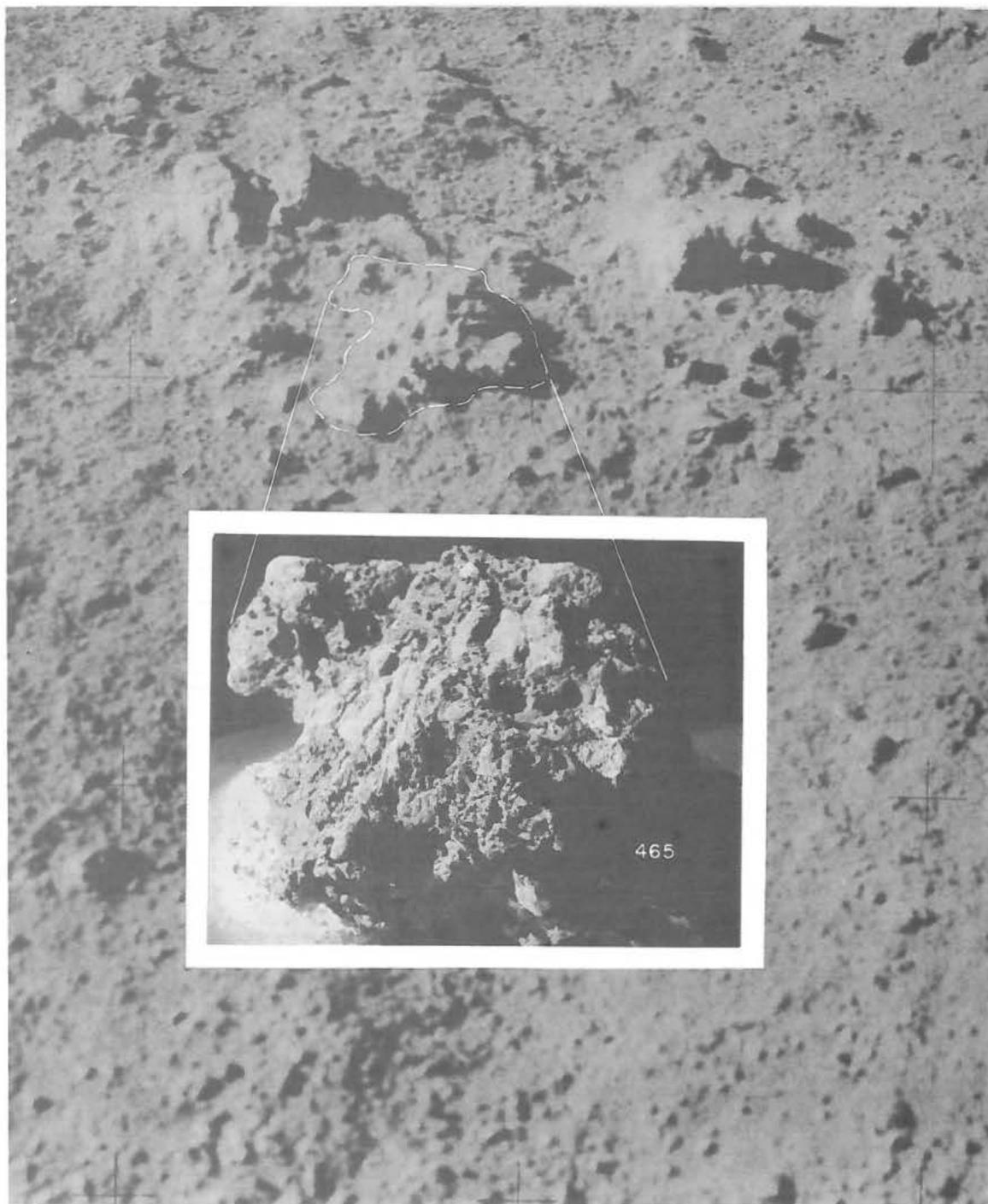


Figure 125. Sample 465 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-86-11678, taken cross-sun, looking south.

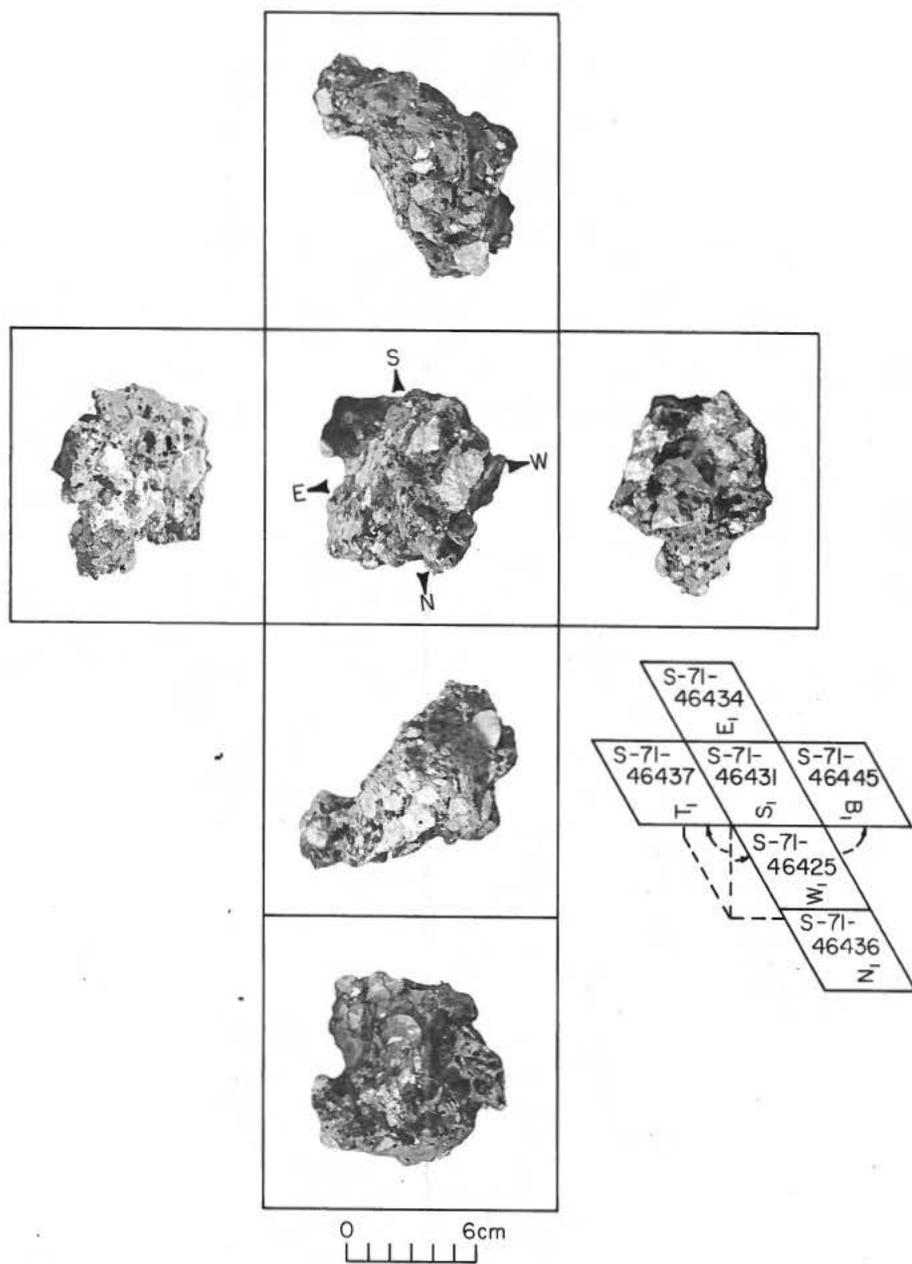


Figure 126. Orthogonal views of sample number 465.



Figure 129. Samples 470-474, 475, 476, 495 collected at station 4 (exact place with relation to big boulder not known). Pre-sampling, down-sun photograph AS15-87-11761, looking west.

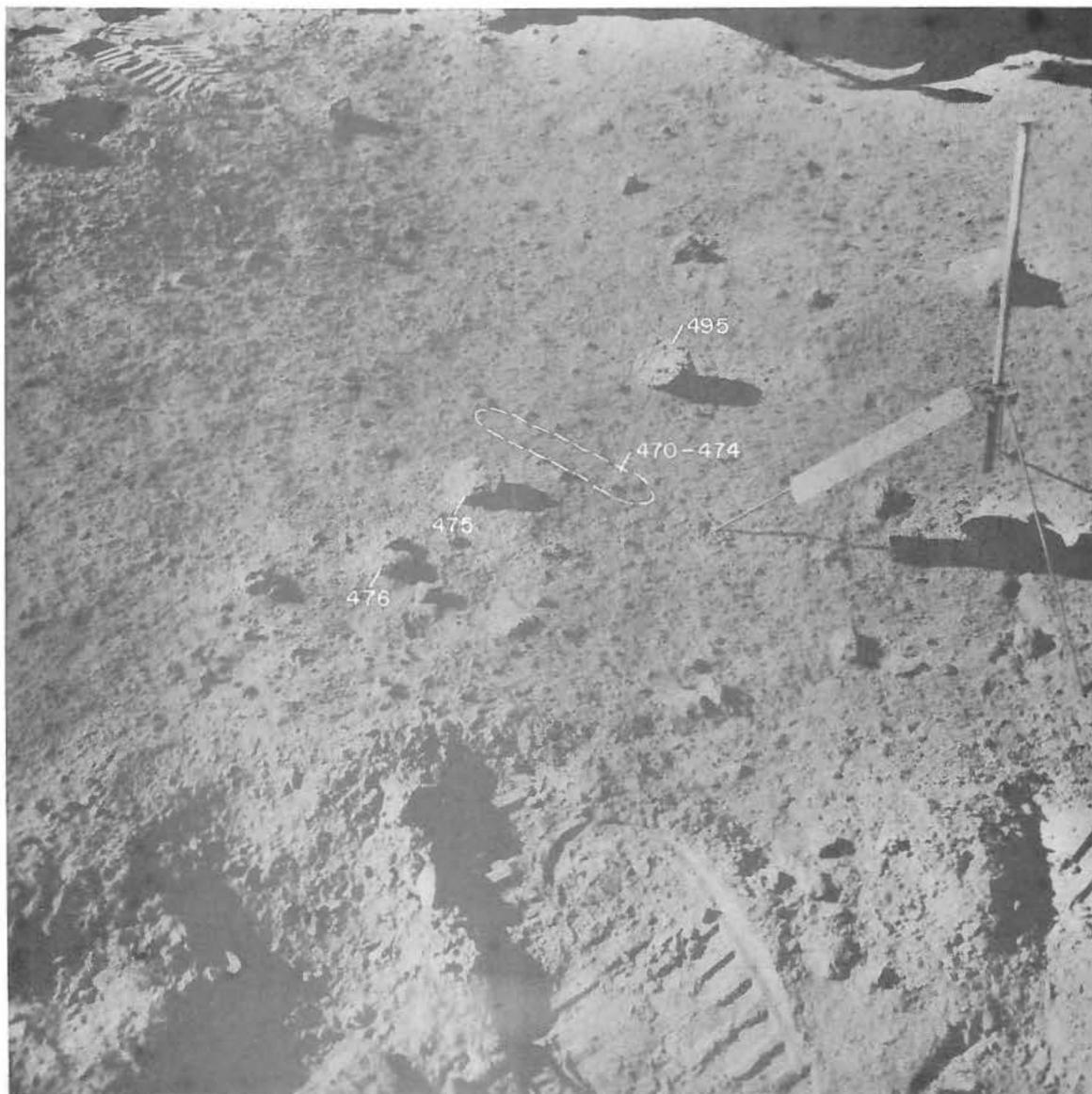


Figure 130. Samples 470-474, 475, 476, 495 collected at station 4. Pre-sampling, cross-sun photograph AS15-87-11759, looking south.

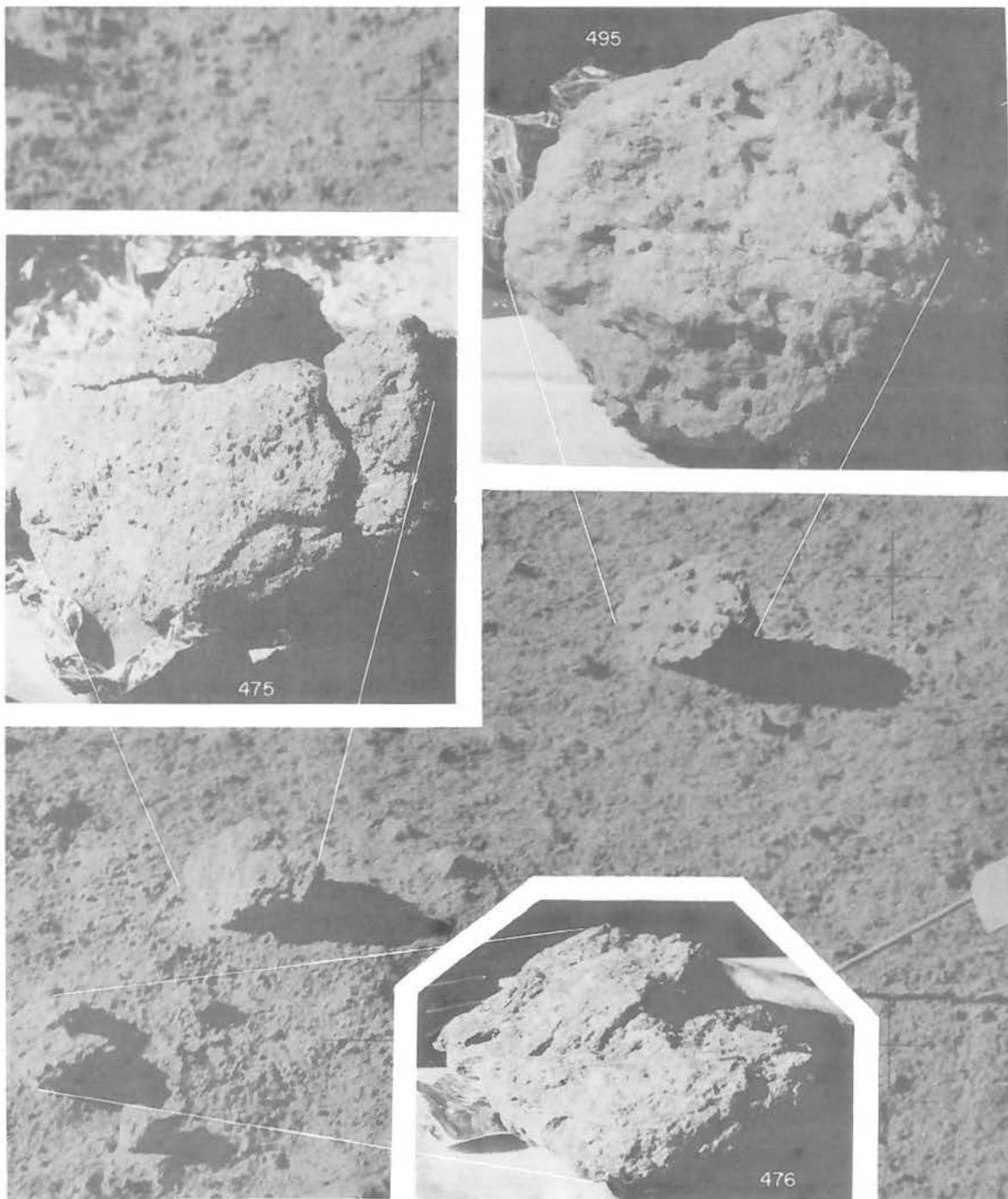


Figure 131. Samples 475, 476, 495 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-87-11759, taken cross-sun, looking south.

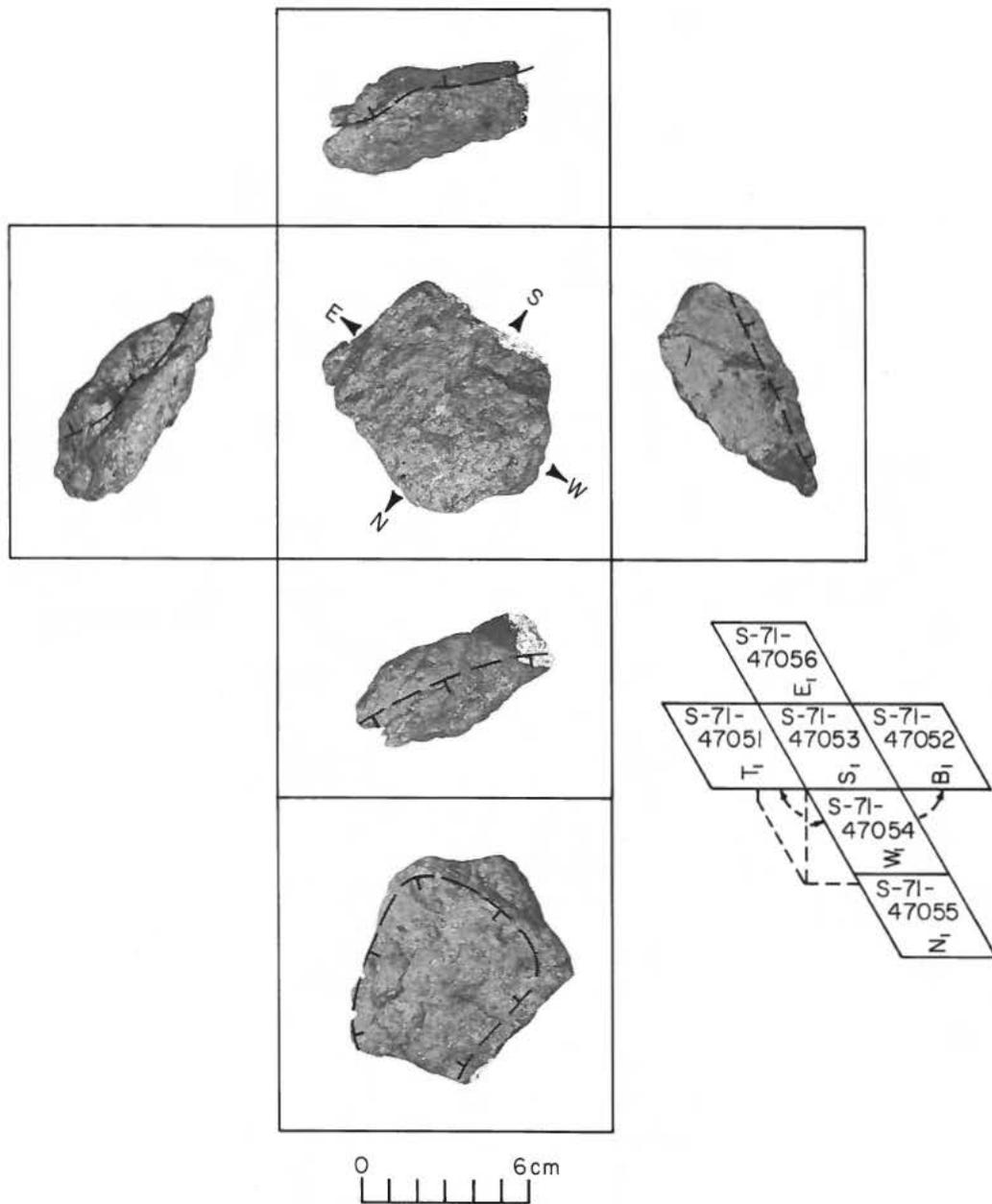
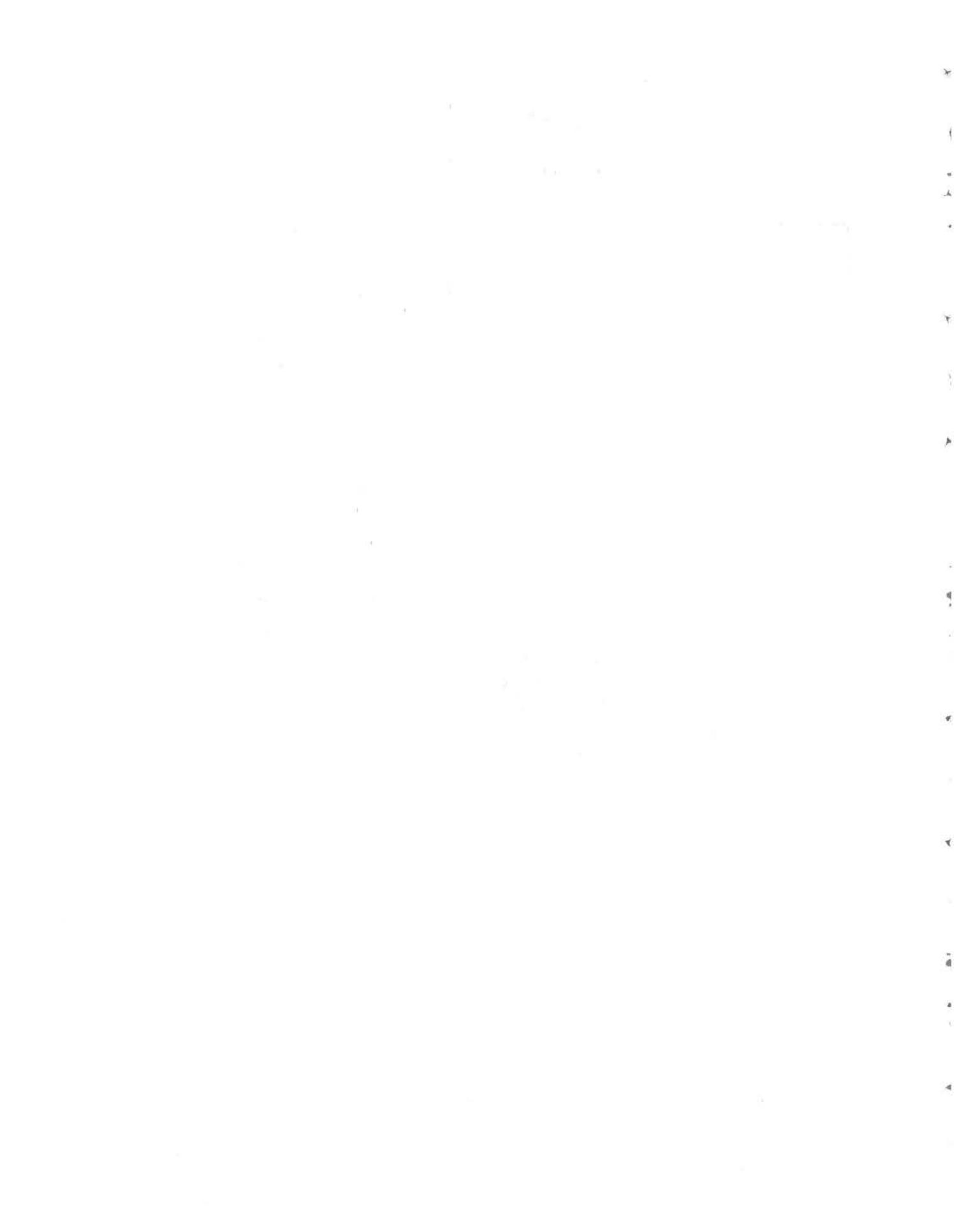


Figure 132. Orthogonal views of sample number 476.



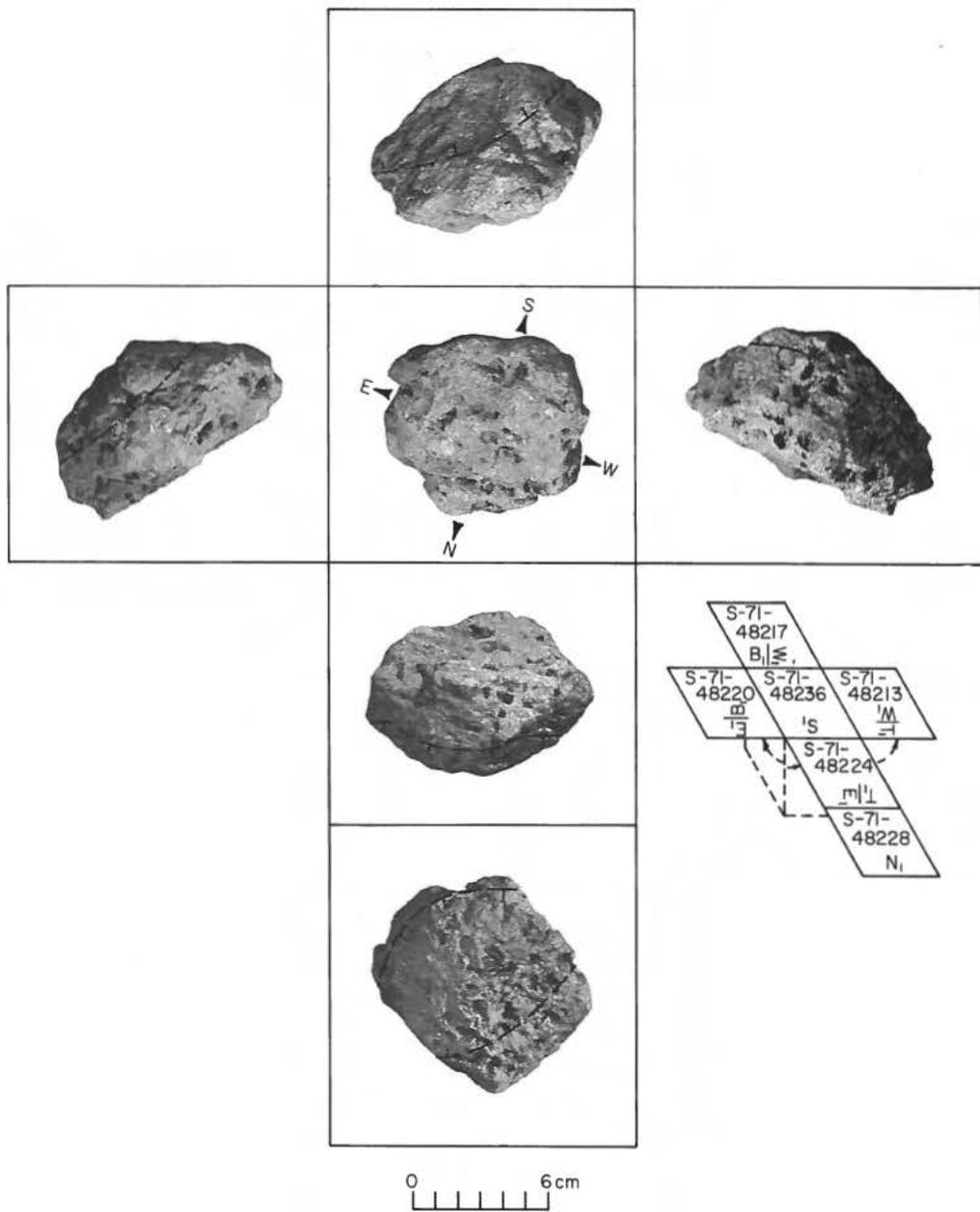


Figure 133. Orthogonal views of sample number 495.

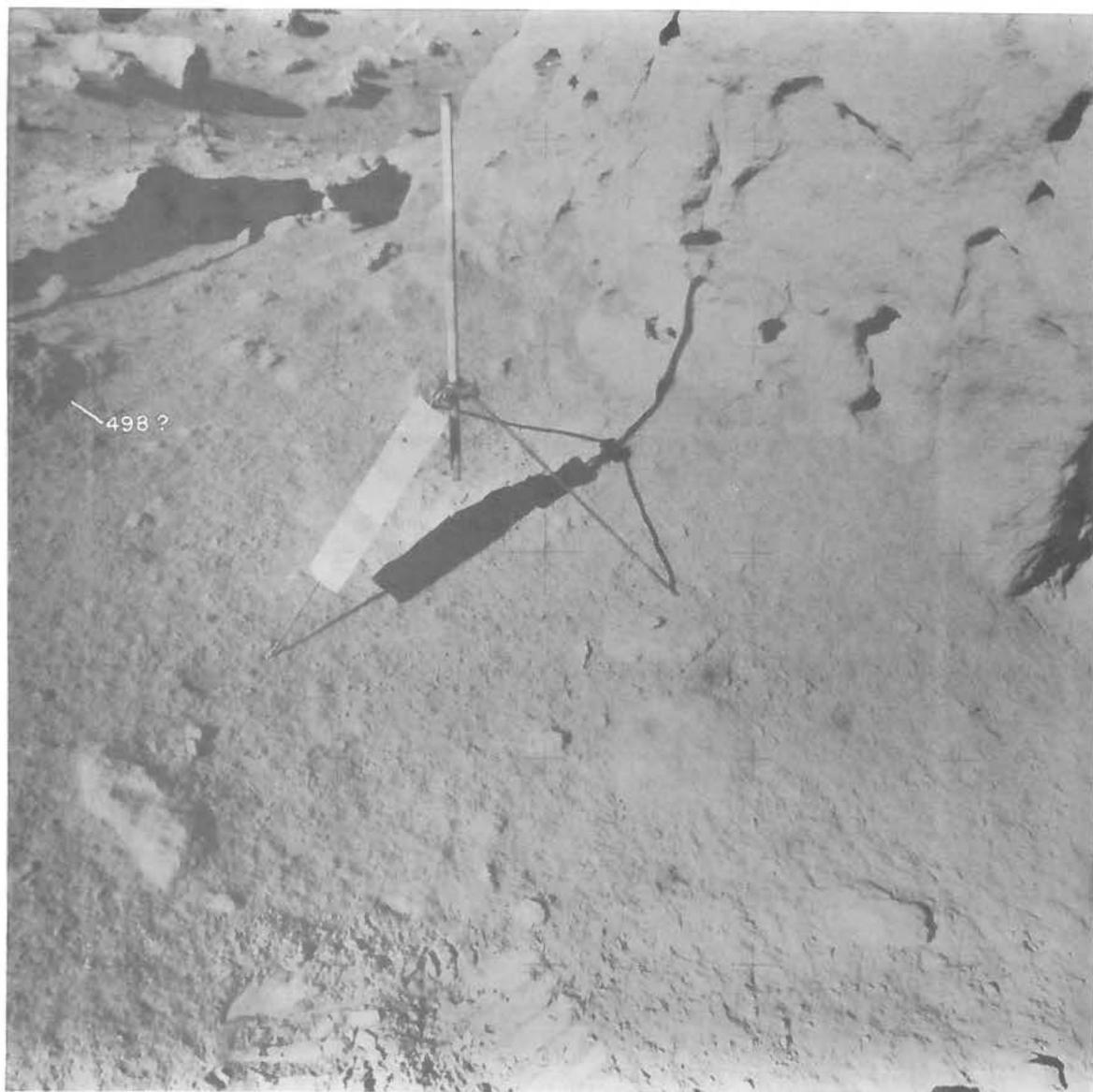


Figure 134. Sample 498(?) collected at station 4 from near boulder on rim of Dune crater. Pre-sampling, cross-sun photograph AS15-87-11765, looking southwest.

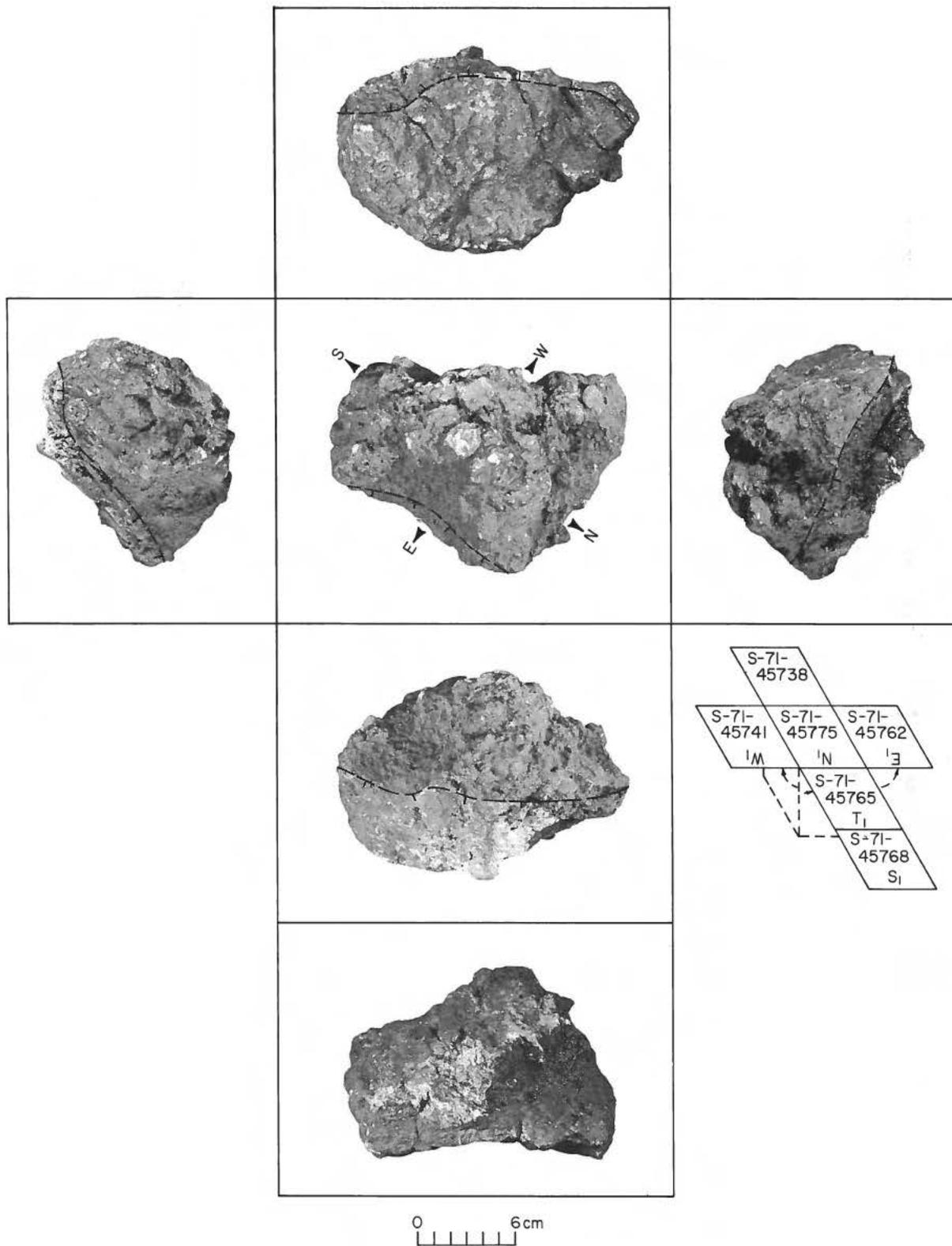


Figure 134a. Orthogonal view of sample number 498.

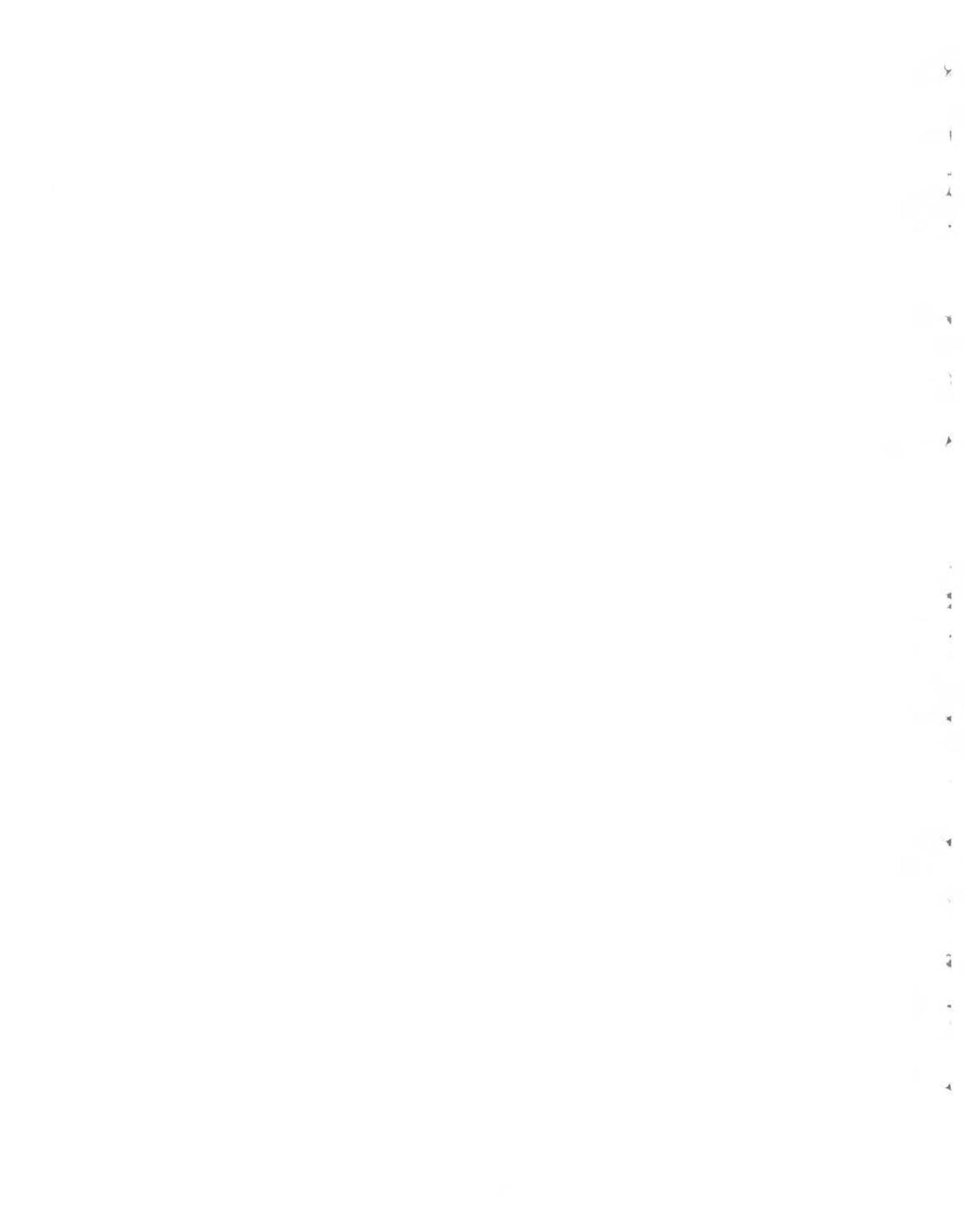




Figure 135. Sample 499 (485 and 486 were also chipped from large boulder; location not precisely known) collected at station 4 from top of large boulder near rim of Dune crater. Pre-sampling, down-sun, photograph AS15-89-11768, looking west.

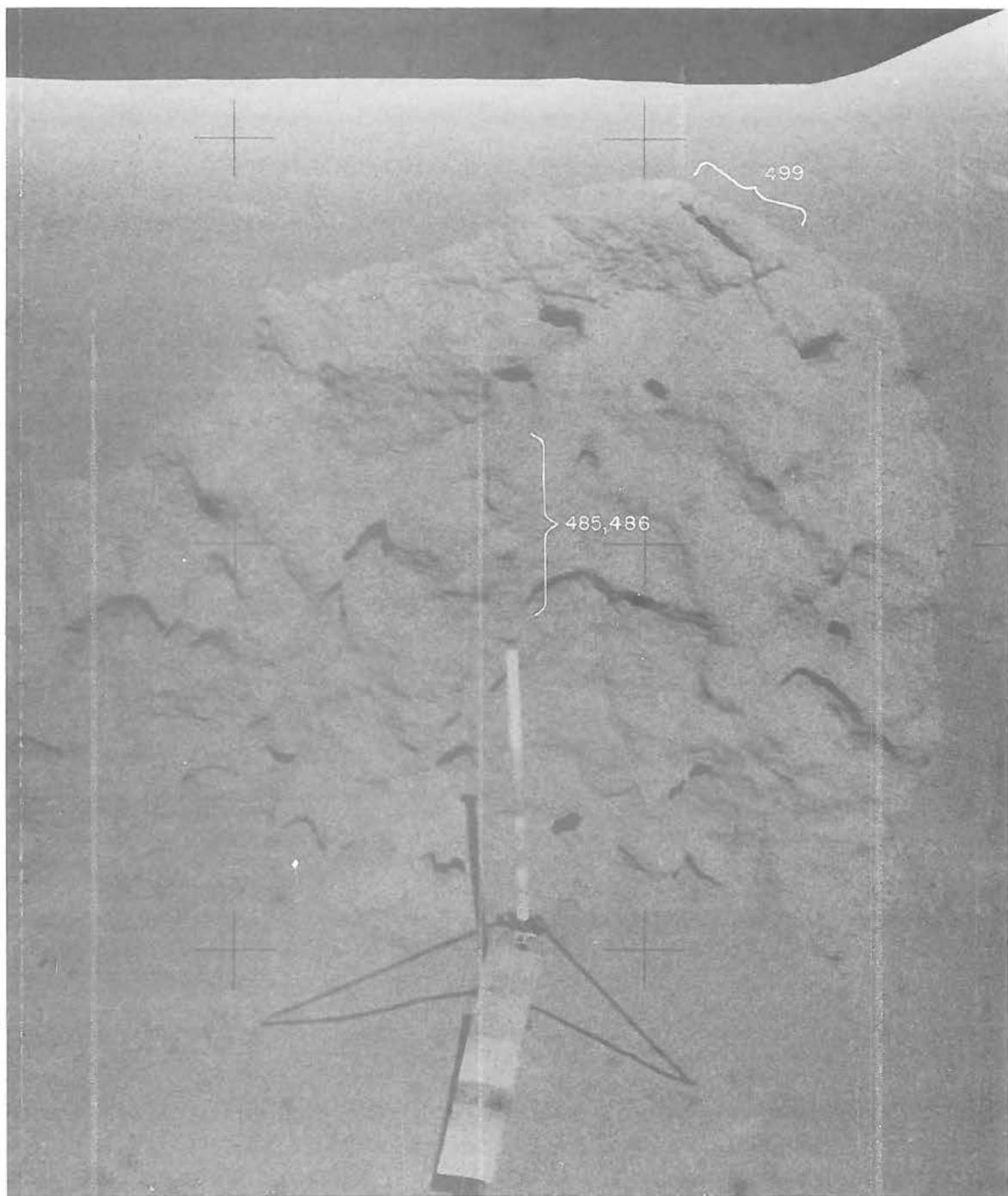


Figure 136. Sample 499 collected at station 4 from top of large boulder on rim of Dune crater. Pre-sampling, down-sun, photographic enlargement of photograph AS15-87-11768, looking west.

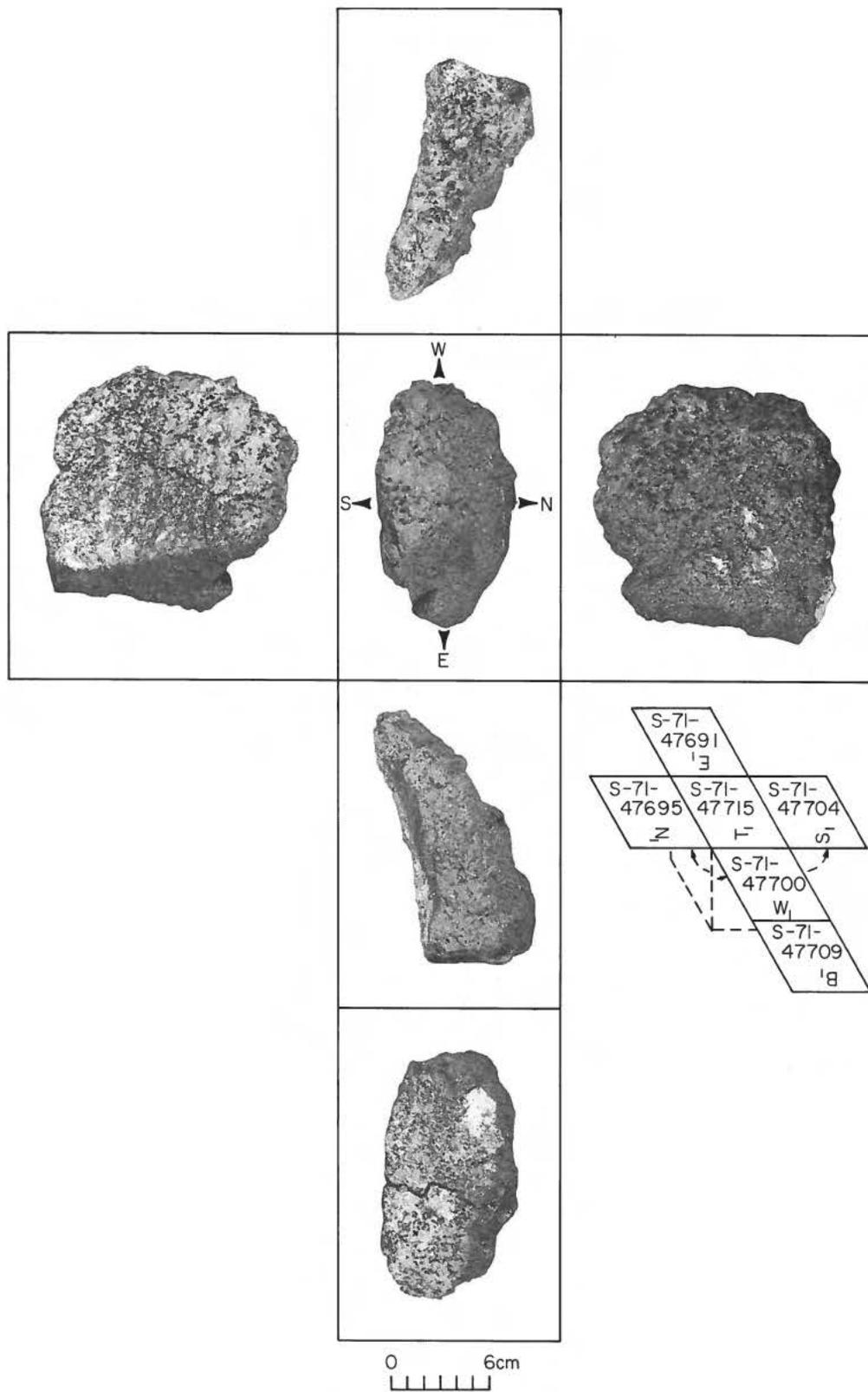


Figure 137. Orthogonal views of sample number 499.

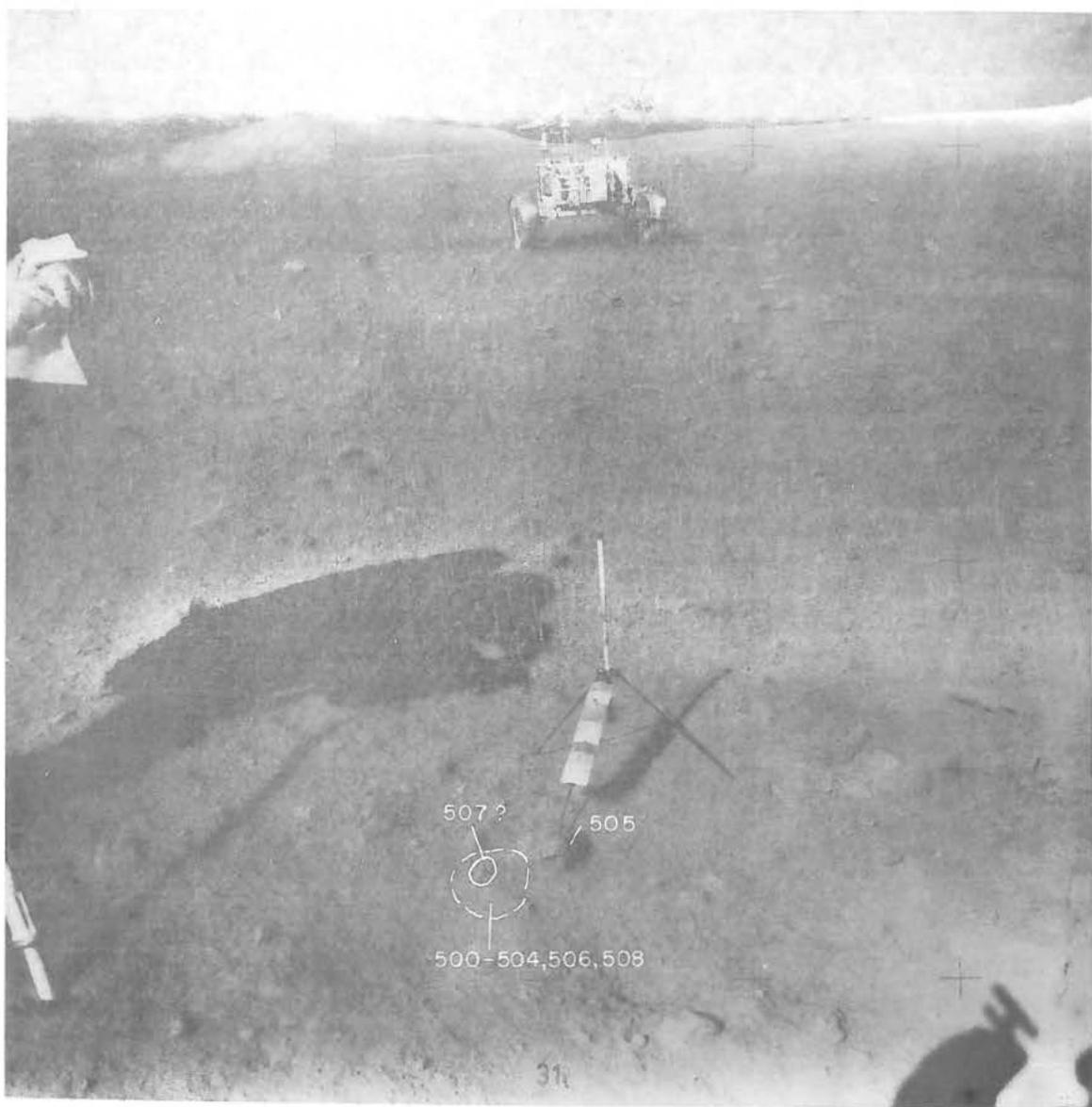


Figure 138. Samples 500-508 (506, 508 may have broken from 505) collected at station 9 from ejecta of small fresh crater. Pre-sampling, cross-sun photograph AS15-82-12108, looking southwest.

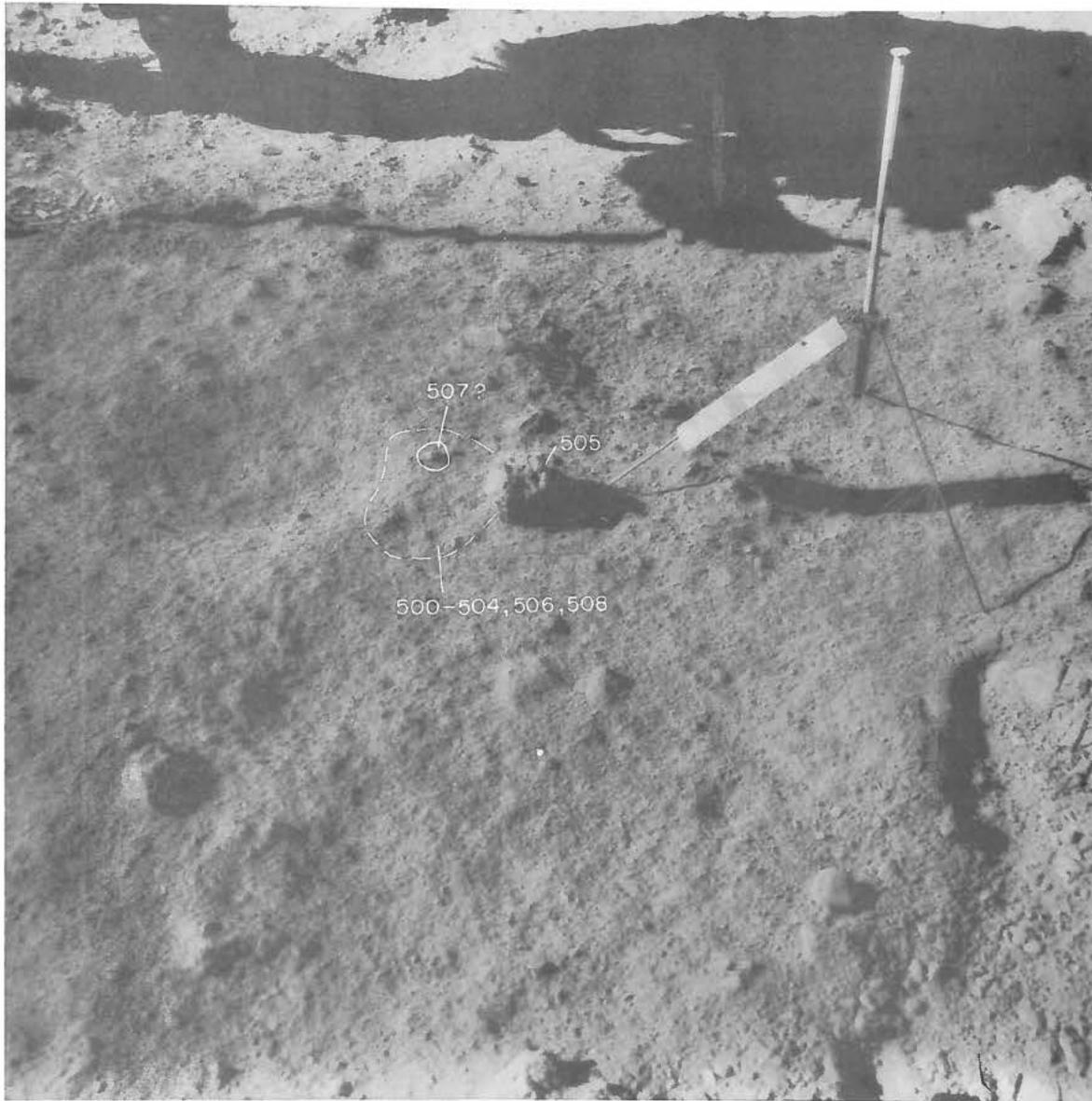


Figure 139. Samples 500-508 collected at station 9 from ejecta of small fresh crater. Pre-sampling, cross-sun photograph AS15-82-11105, looking south.



Figure 140. Sample 505 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-12105, taken cross-sun, looking south.

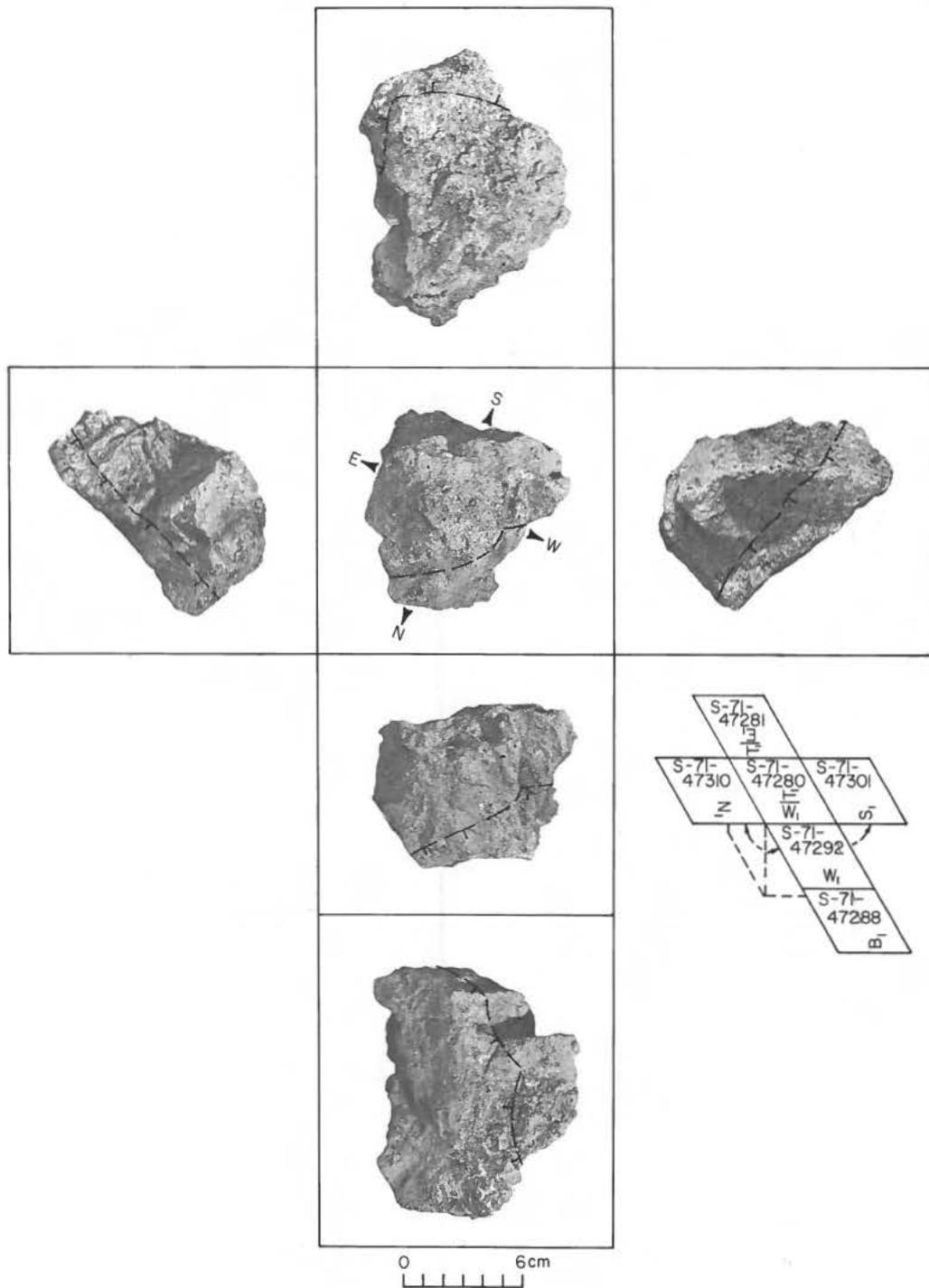


Figure 141. Orthogonal views of sample number 505.

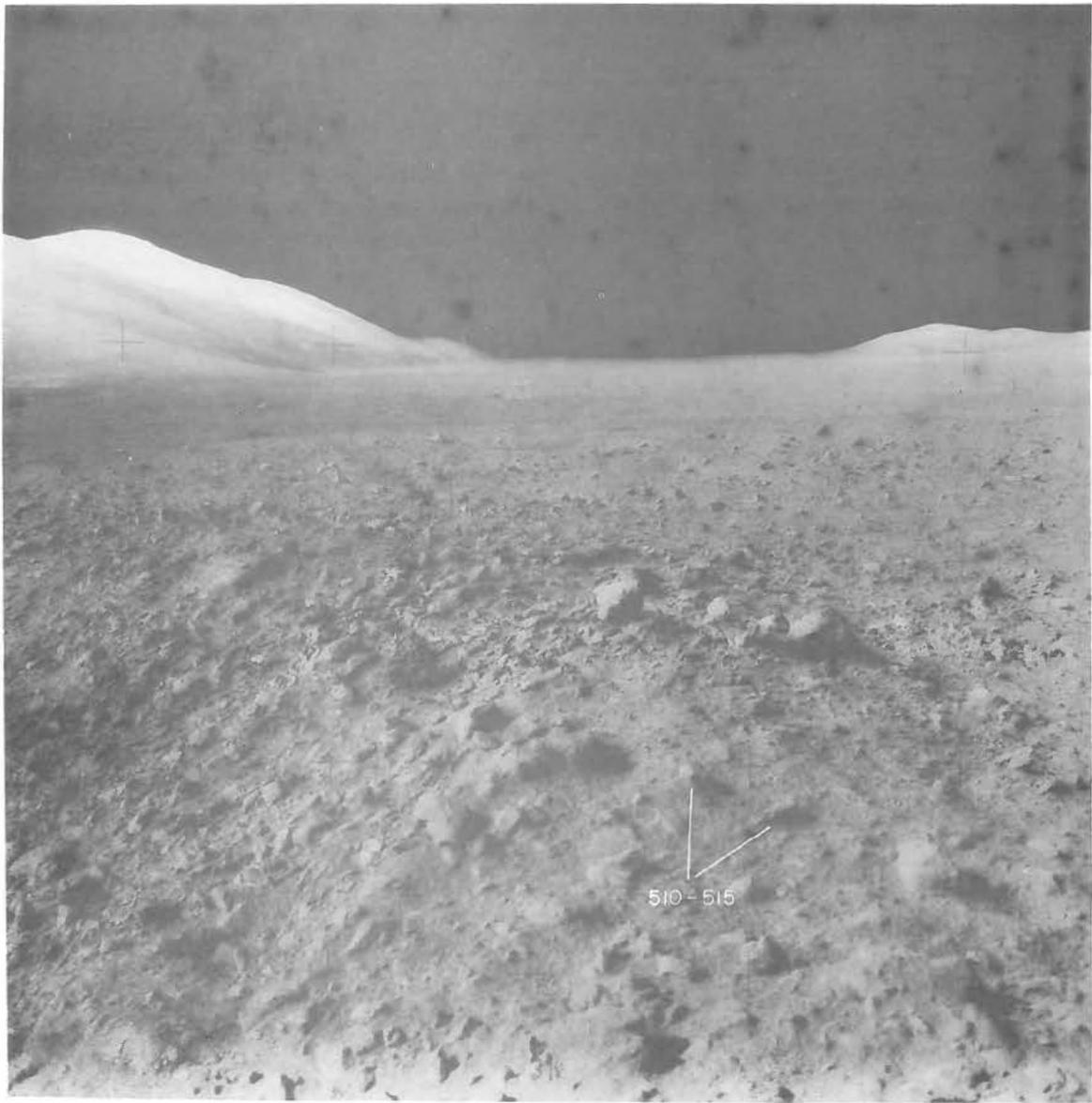


Figure 142. Samples 510-515 (clods that broke apart) collected at station 9 from rim of fresh crater. Pre-sampling, cross-sun photograph AS15-82-11089, looking southwest.



Figure 143. Samples 510-515 collected at station 9. Pre-sampling, cross-sun photograph AS15-82-11098, looking south.



Figure 144. Sample 529 (and vicinity of 528, not identified) collected at station 9a near Hadley Rille. Pre-sampling, down-sun photograph AS15-82-11128, looking west.



Figure 145. Sample 529 collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11129, looking south.

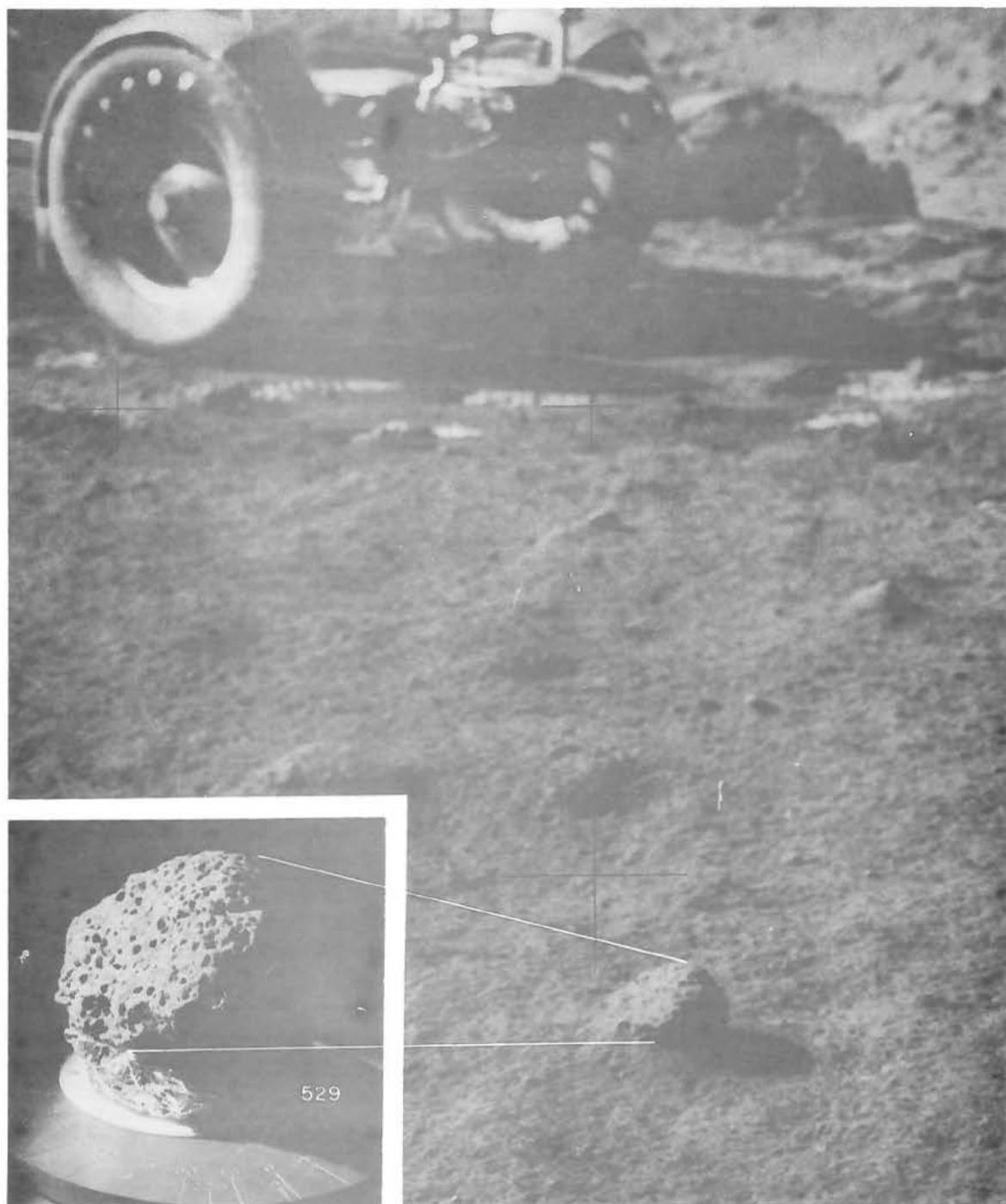


Figure 146. Sample 529 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-11129, taken cross-sun, looking south.

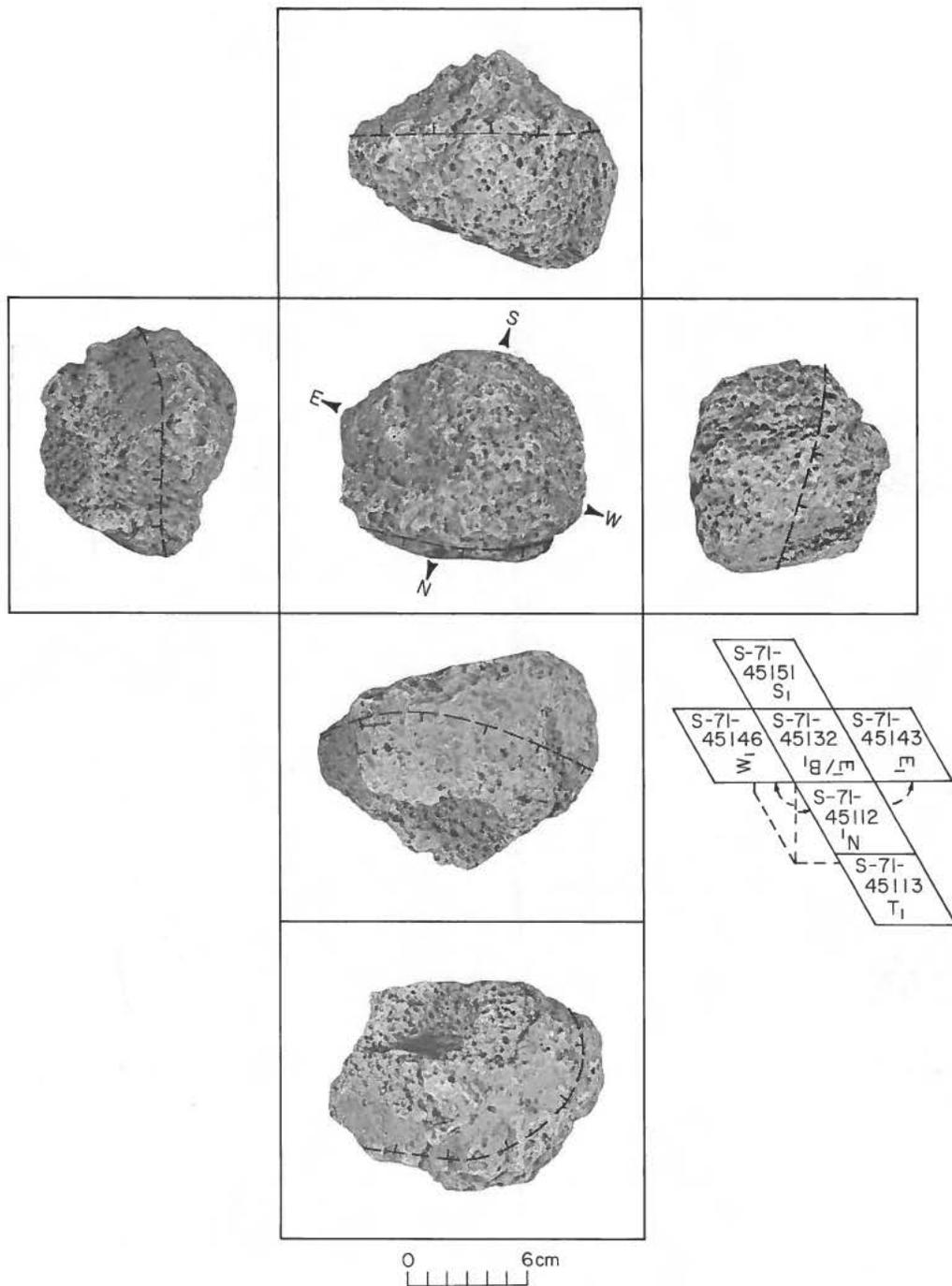


Figure 147. Orthogonal views of sample number 529.

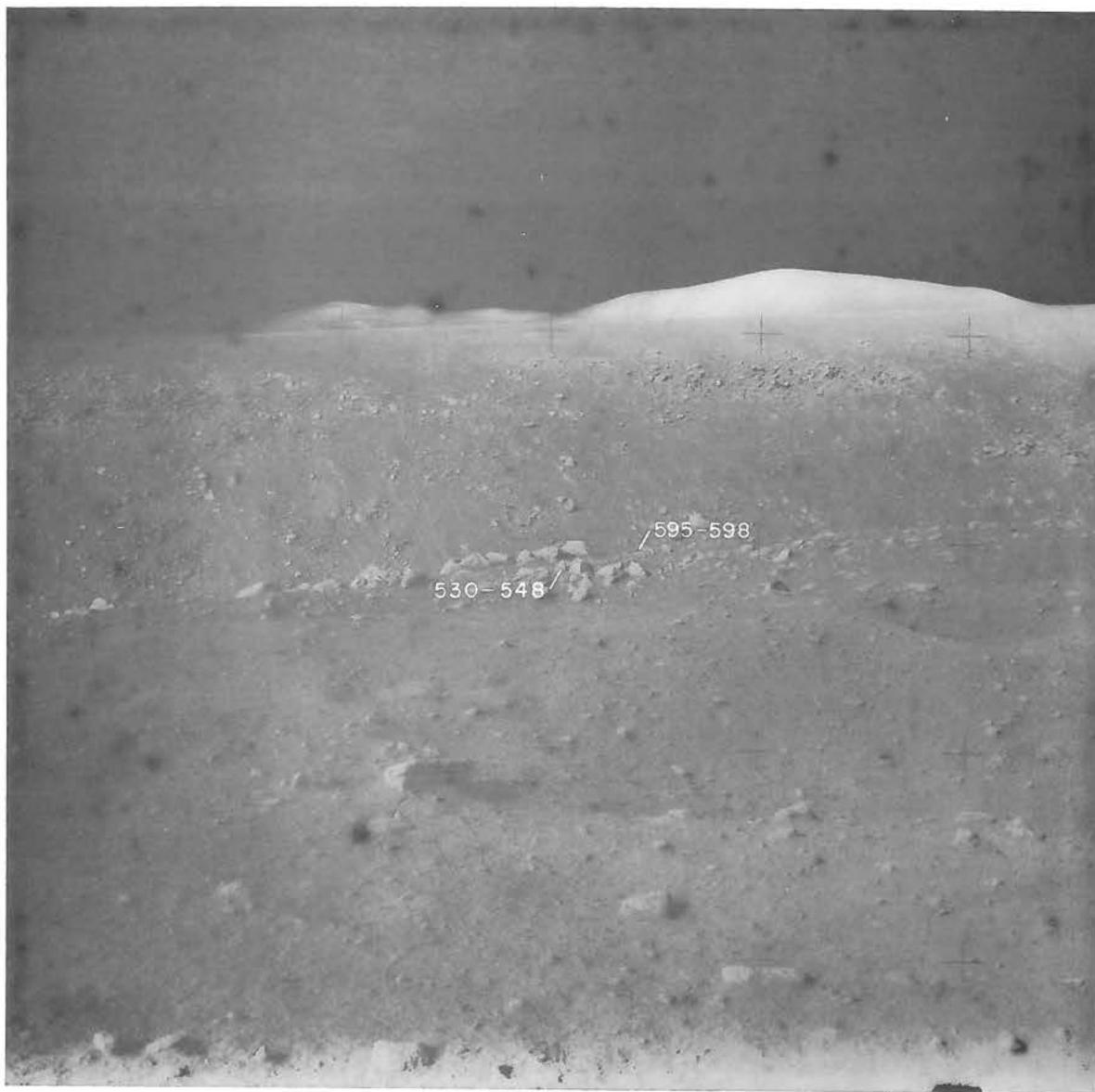


Figure 148. Samples 535, 536, and 595, 596 collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11126, looking southwest.



Figure 149. Samples 535, 536, and 595, 596. Photographic enlargement of part of photograph AS15-82-11126.





Figure 150. Samples 535 and 536 (and vicinity of 530-534, 537-538, 545-548, which are not identified) collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11138, looking west.



Figure 153. Samples 535 and 536, photographic enlargement of part of photograph AS15-82-11138.

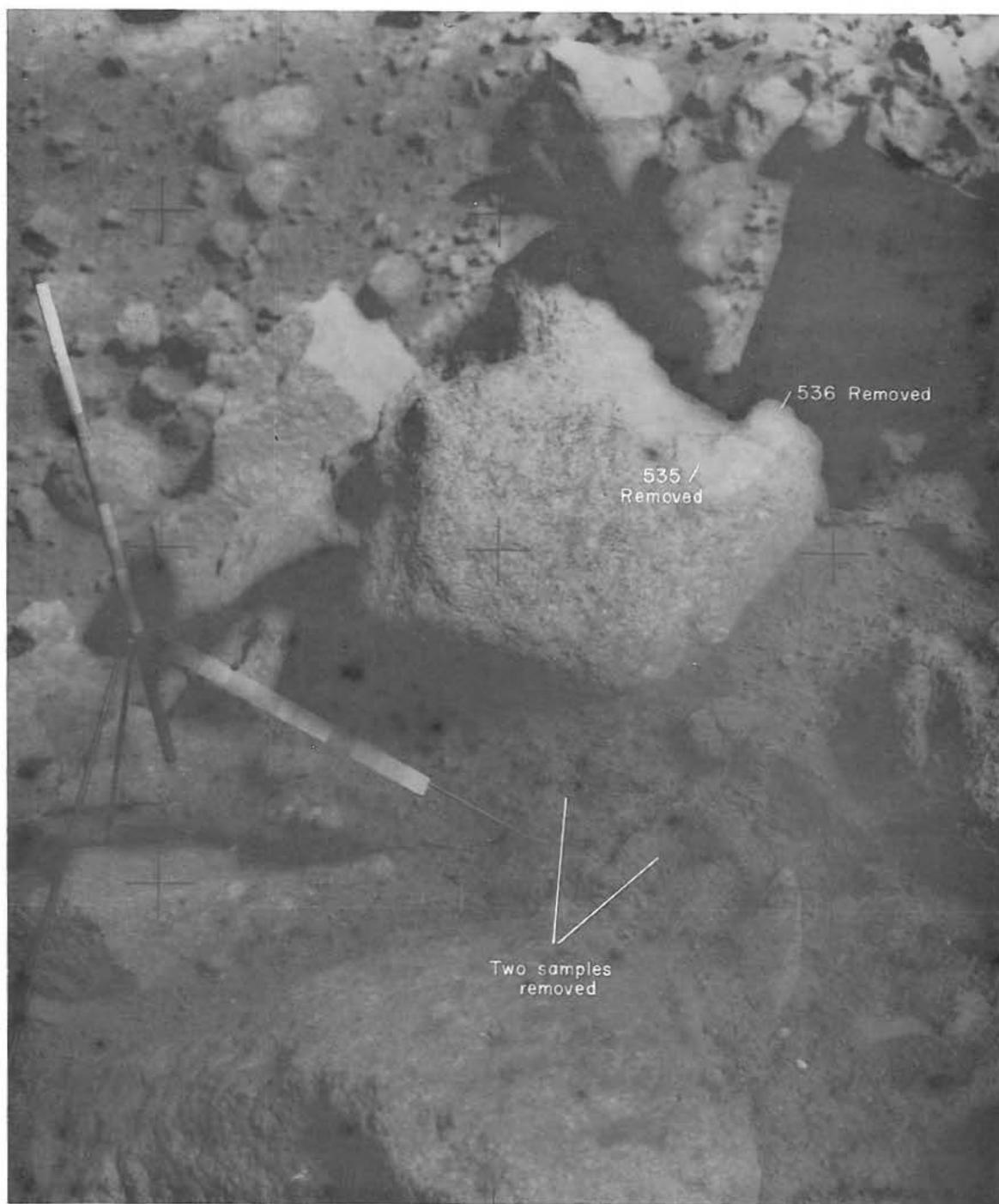
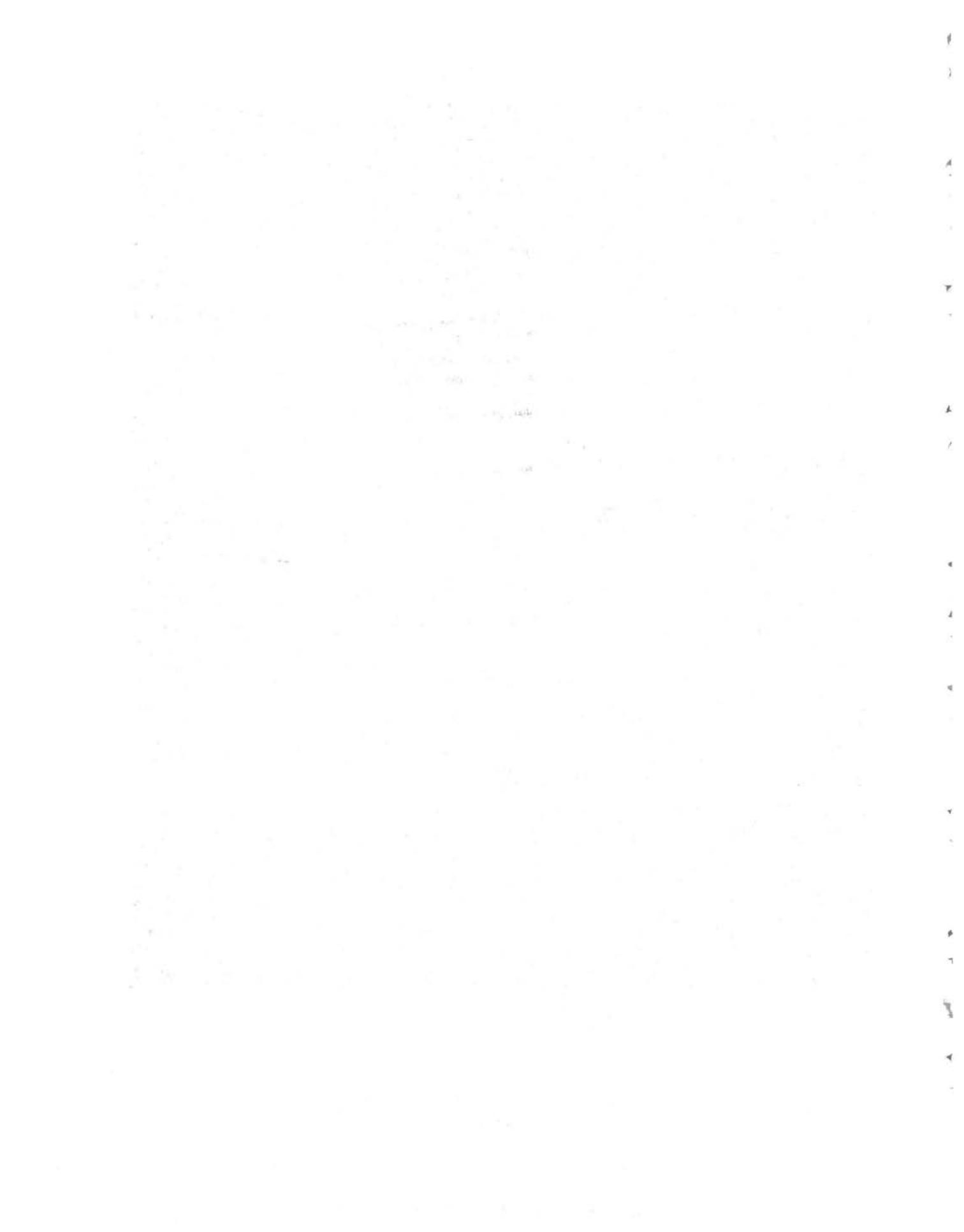


Figure 154. Samples 535 and 536, photographic enlargement of part of photograph AS15-82-11141.



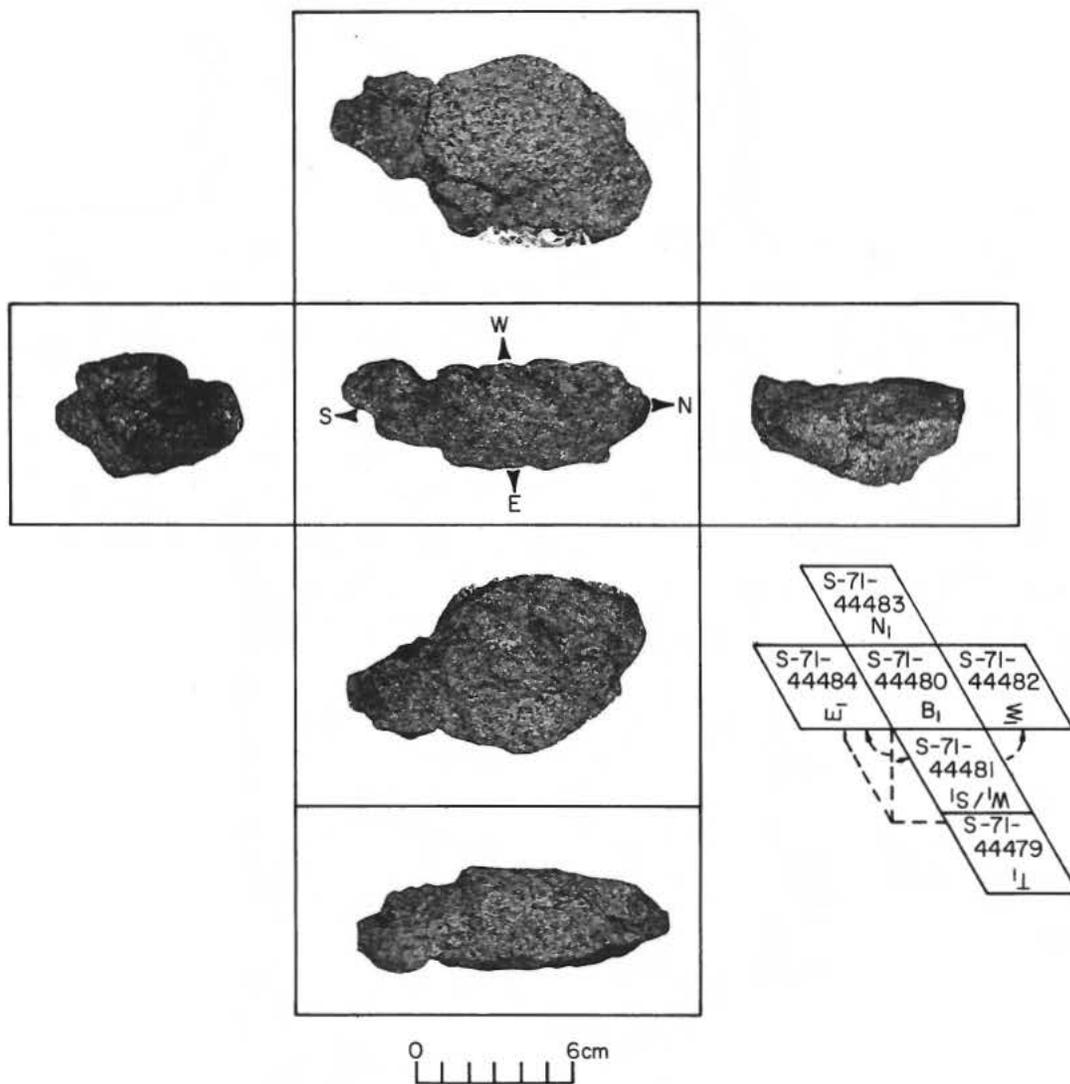


Figure 155. Orthogonal views of sample number 535.



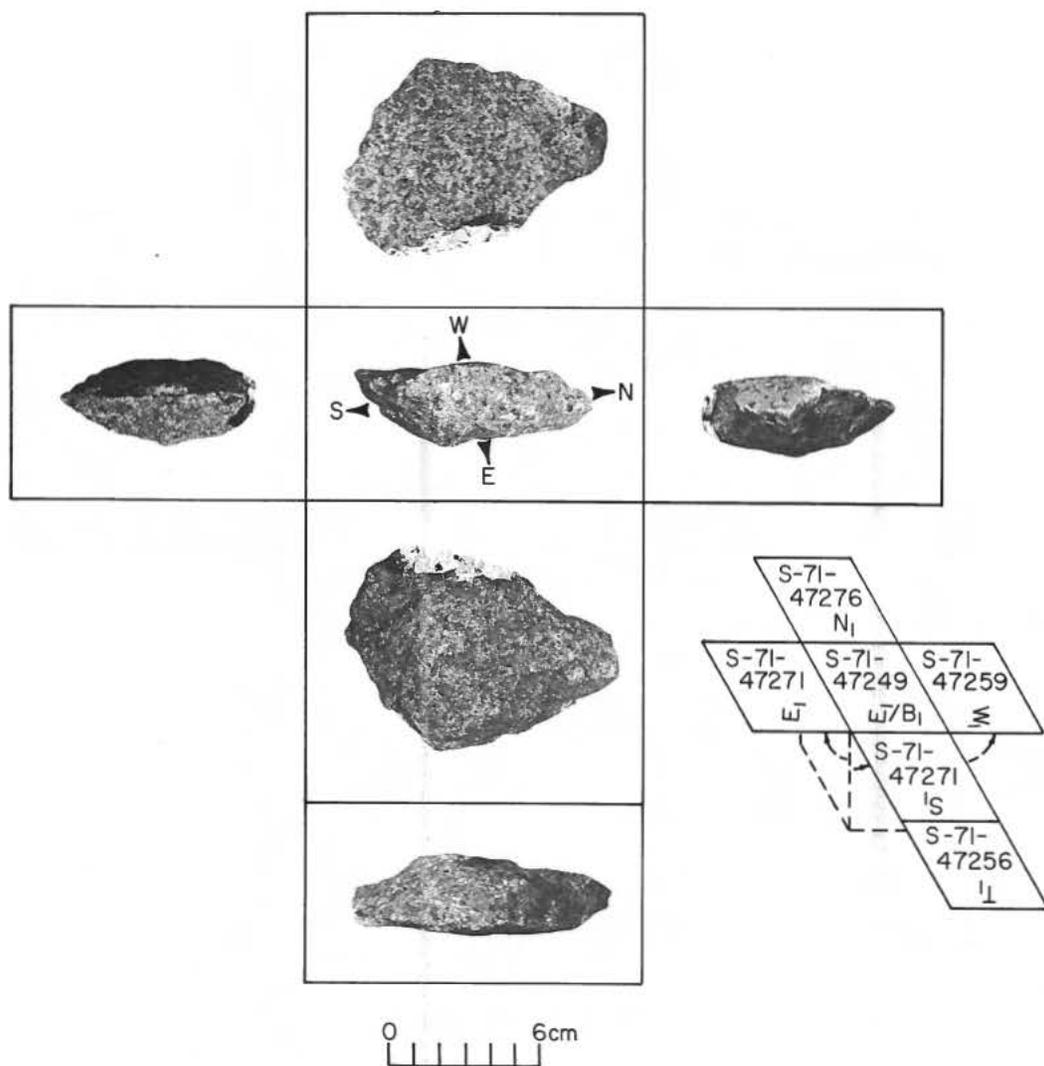


Figure 156. Orthogonal views of sample number 536.

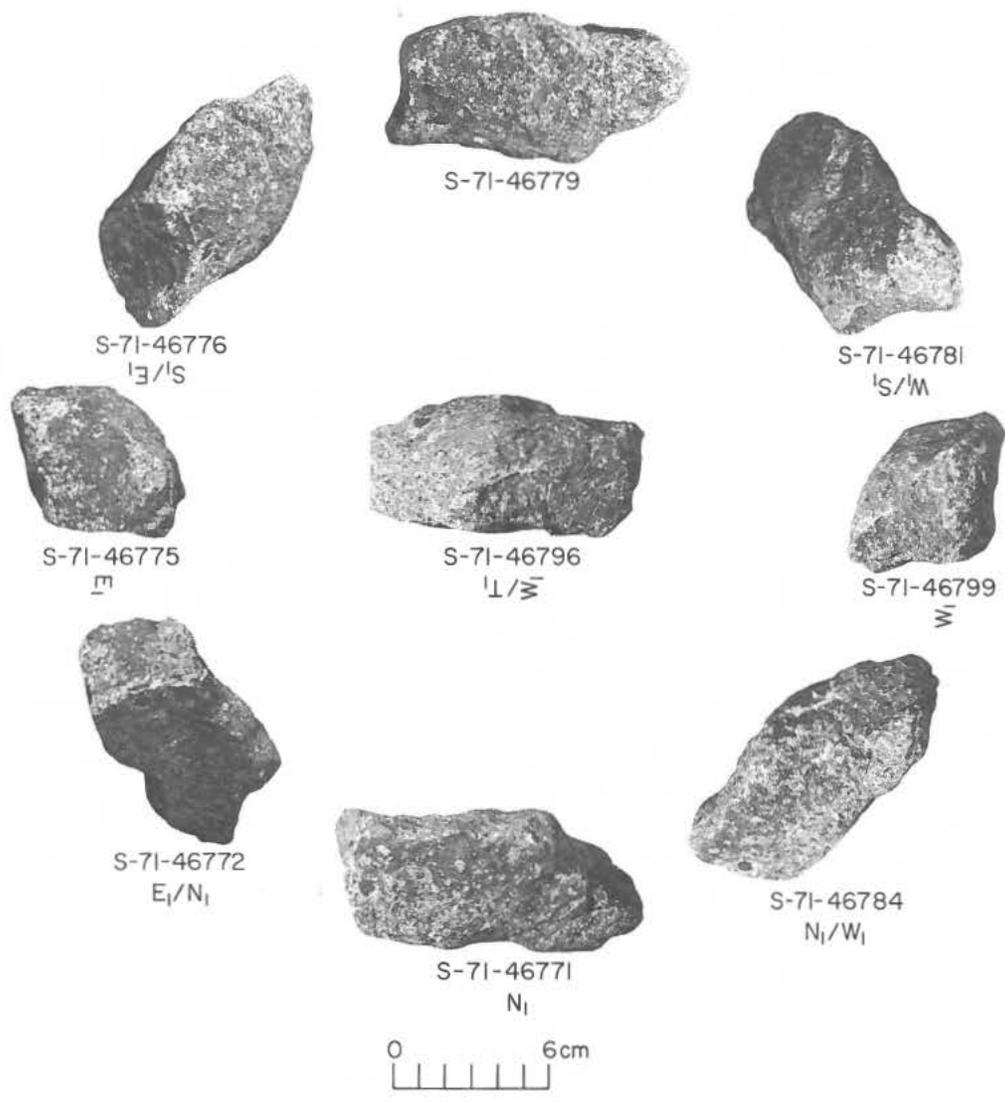
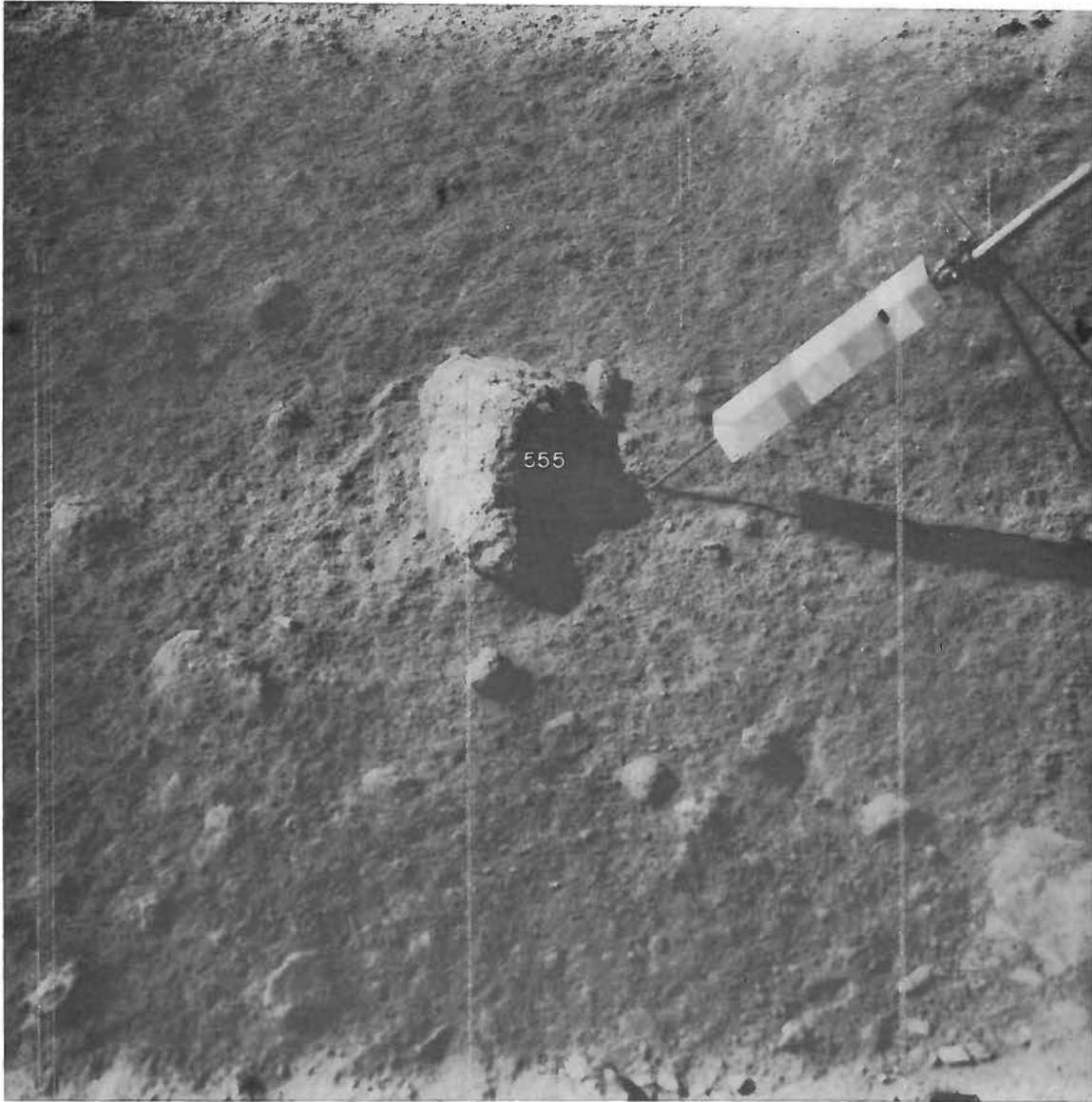
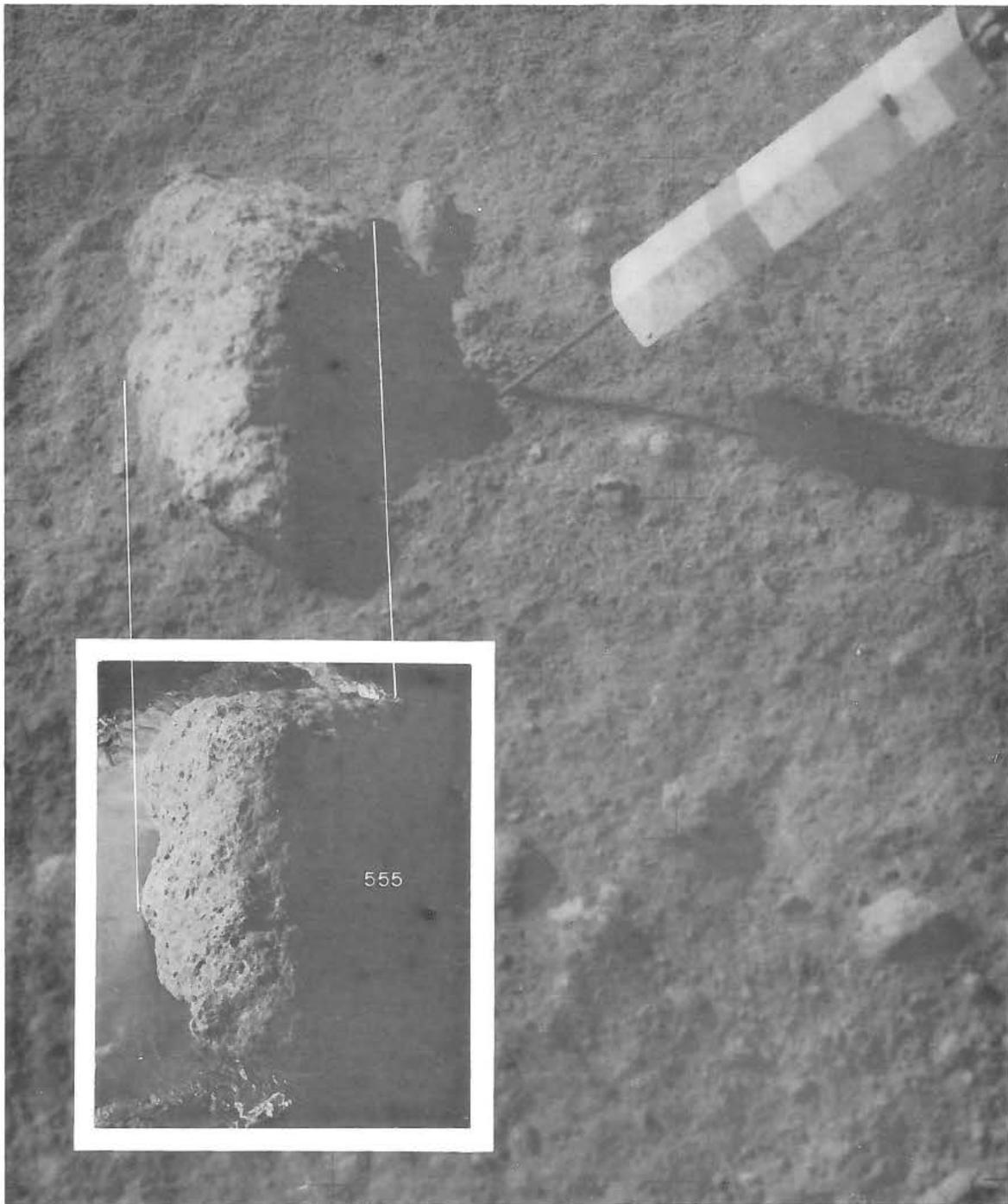


Figure 157. Radial views at 45° of sample number 545.



*Figure 158. Sample 555 collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11164, looking southeast.*



*Figure 159. Sample 555 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-11163, taken cross-sun, looking southeast.*

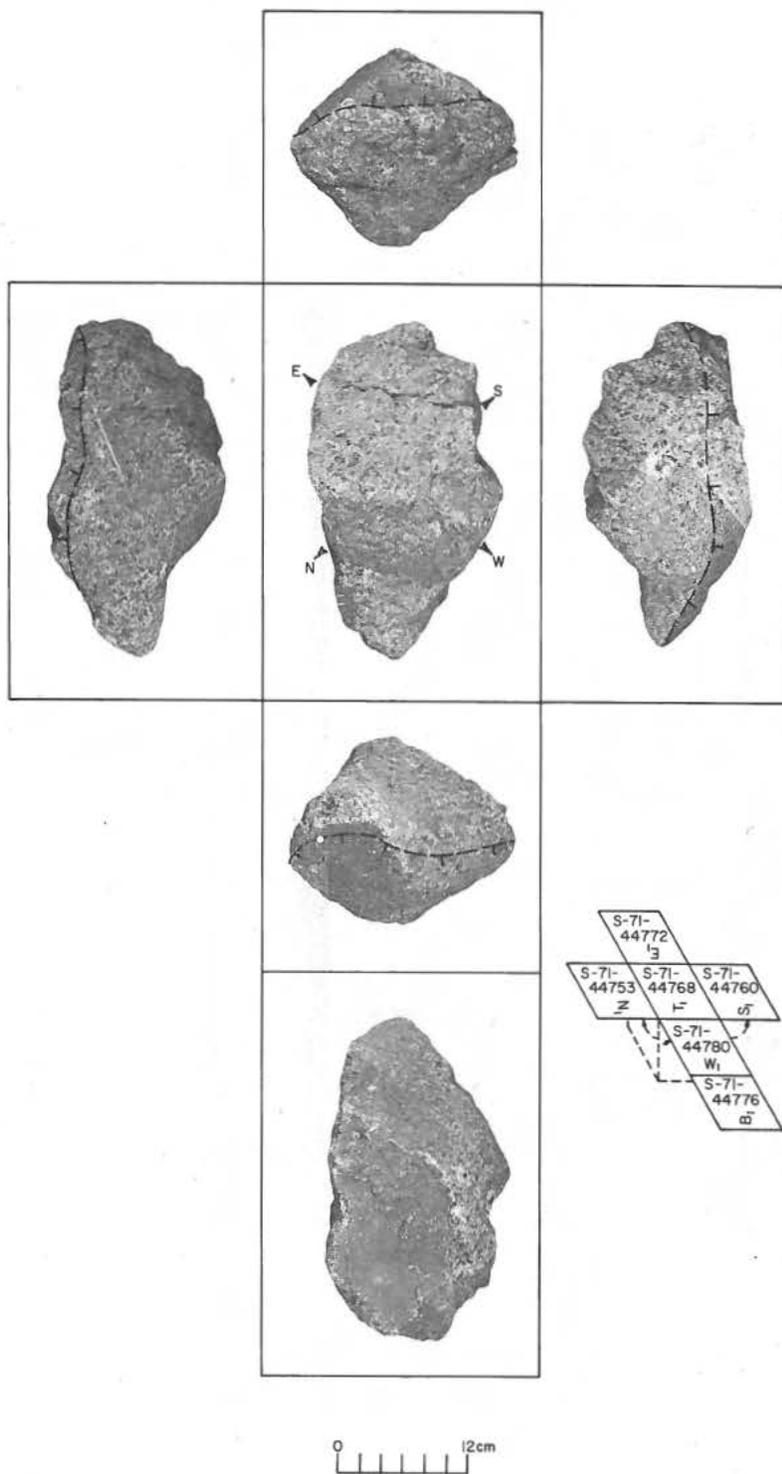
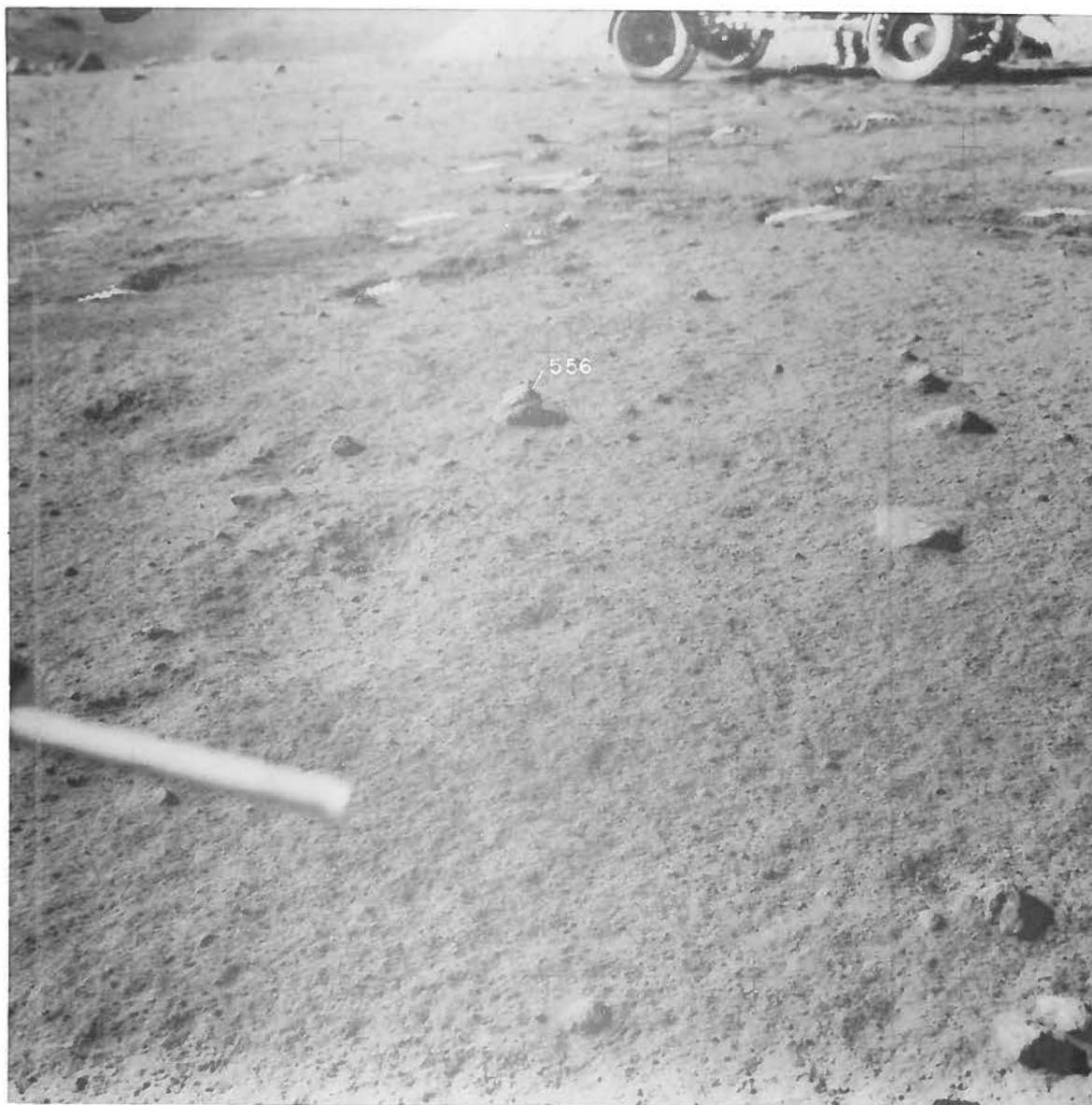


Figure 160. Orthogonal views of sample number 555.



Figure 161. Sample 556 collected at station 9a near Hadley Rille. Pre-sampling, down-sun photograph AS15-82-11133, looking west.



*Figure 162. Sample 556 collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11135, looking south.*

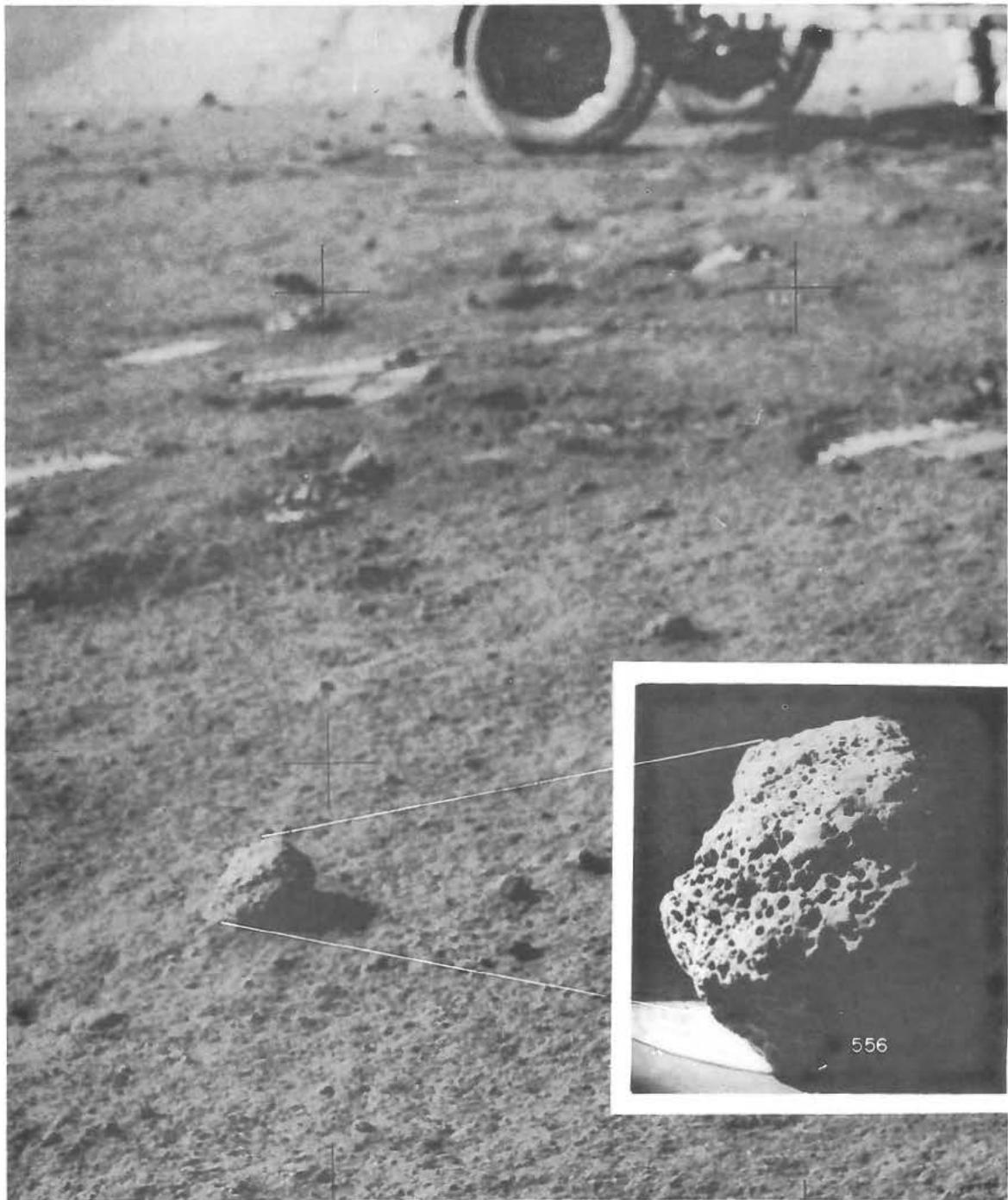


Figure 163. Sample 556 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-11135, taken cross-sun, looking south.

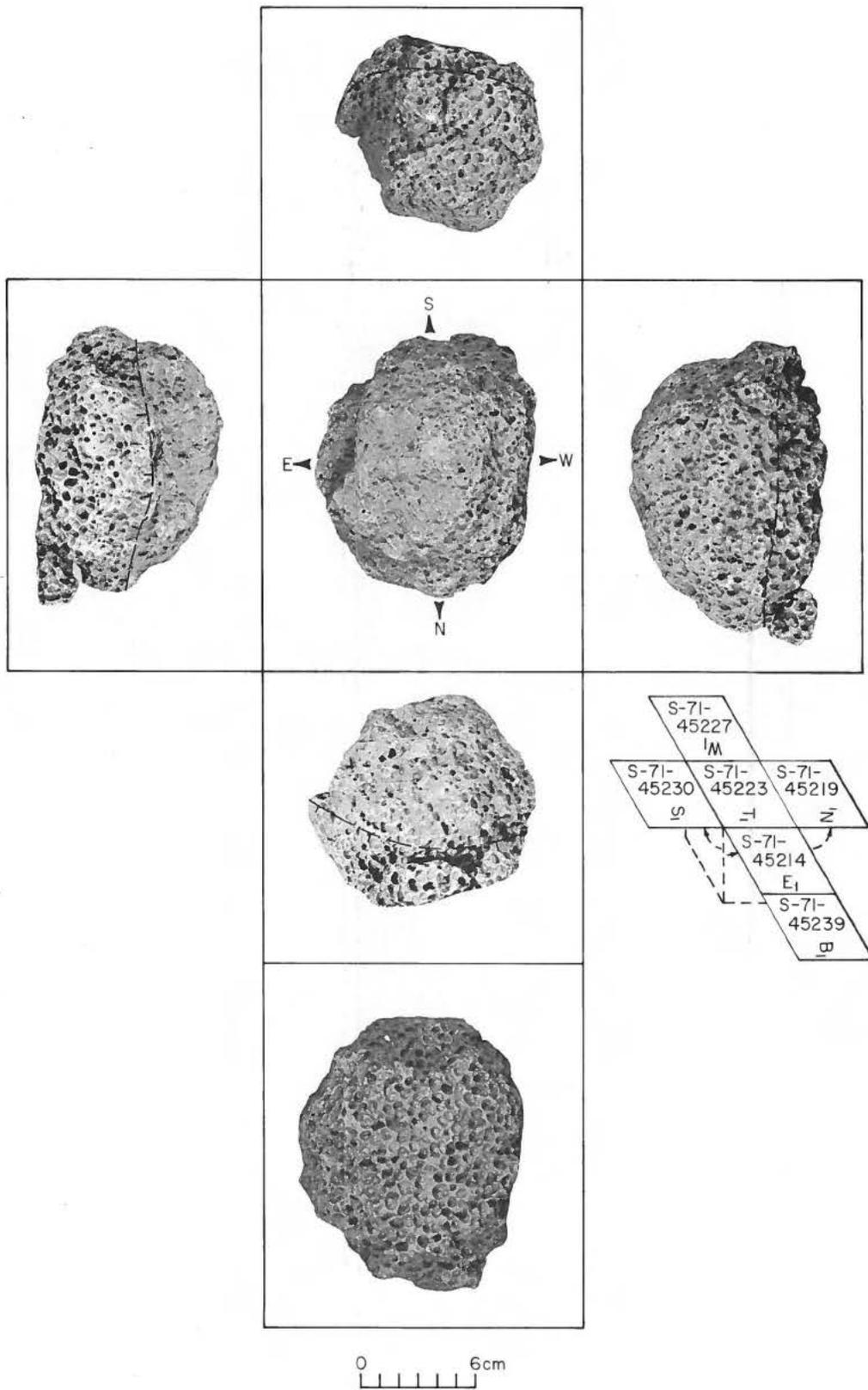


Figure 164. Orthogonal views of sample number 556.



*Figure 165. Sample 557 collected at station 9a near Hadley Rille. Pre-sampling, down-sun photograph AS15-82-11136, looking west.*

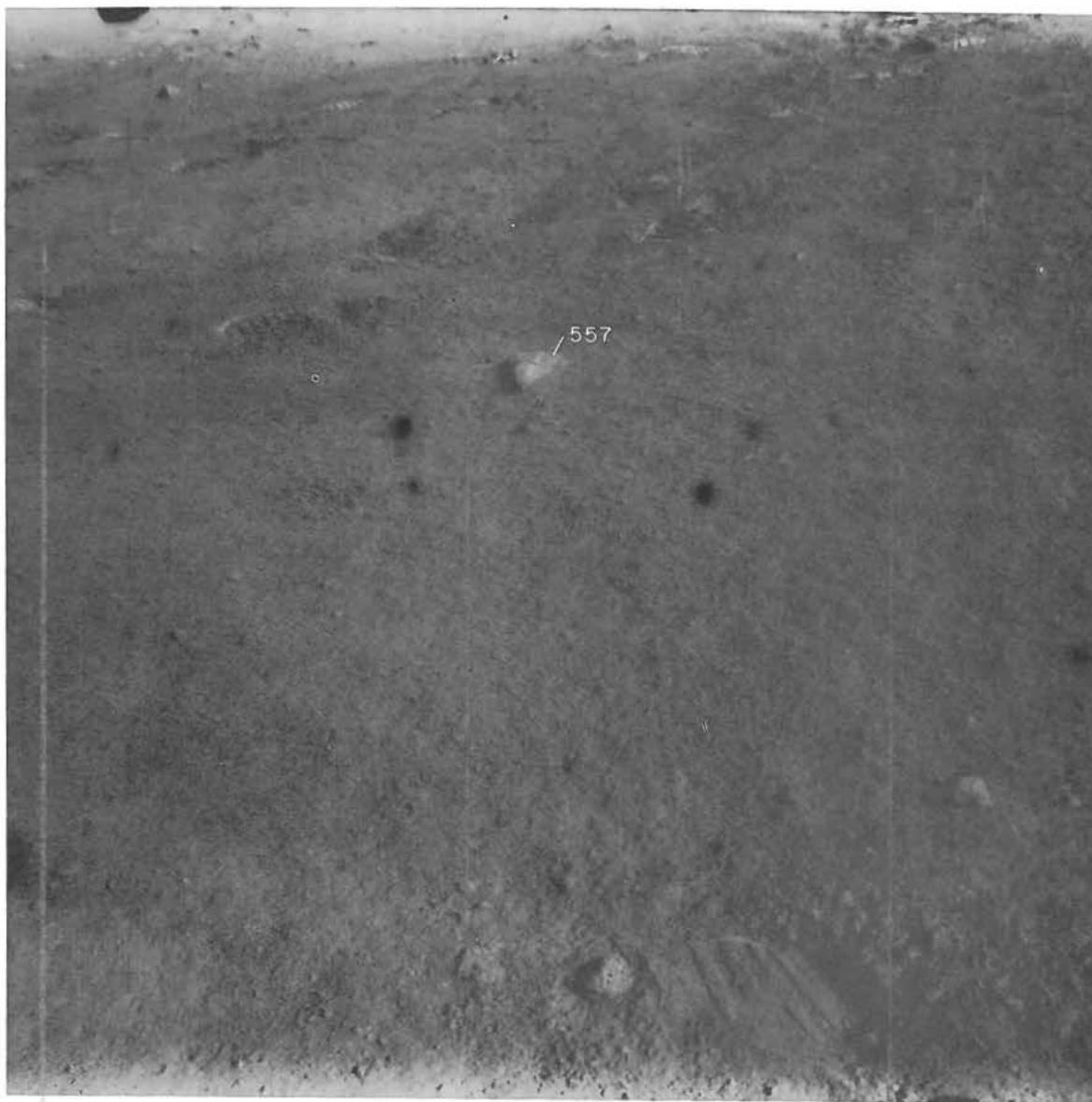


Figure 166. Sample 557 collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11137, looking north.

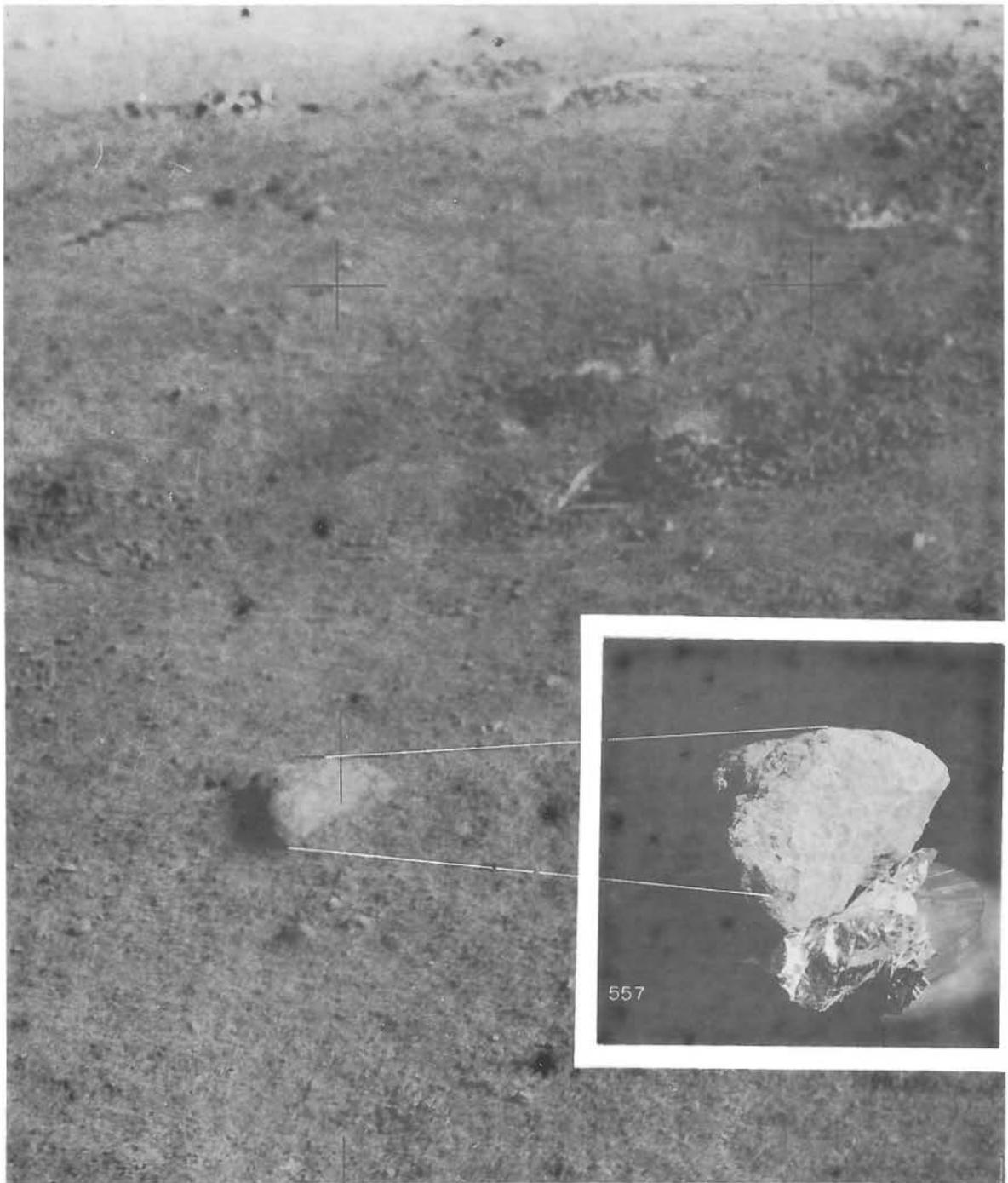


Figure 167. Sample 557 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-11137, taken cross-sun, looking north.

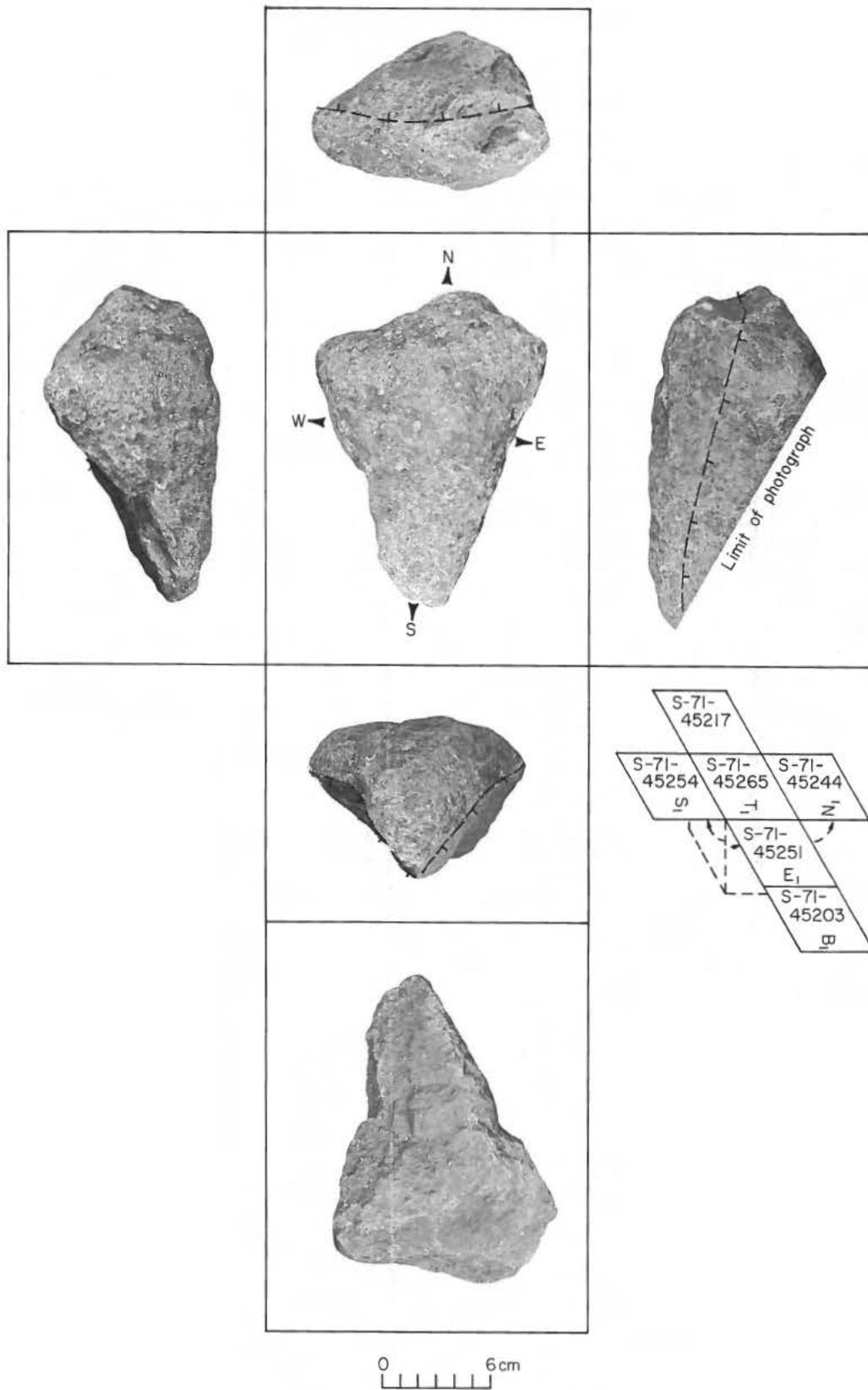
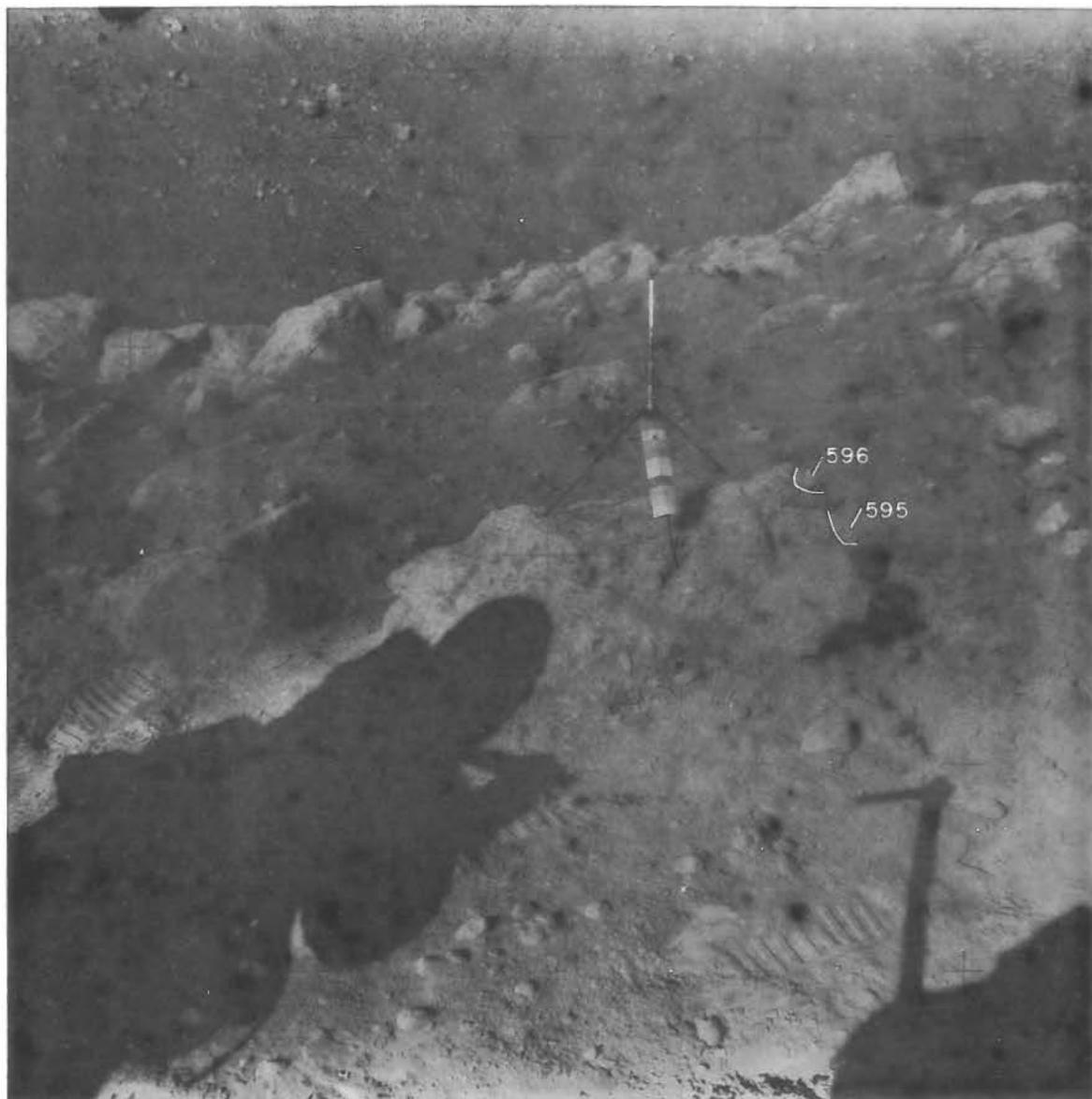


Figure 168. Orthogonal views of sample number 557.



*Figure 169. Samples 595, 596 (and vicinity of samples 597, 598, not identified) collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11142, looking southwest.*

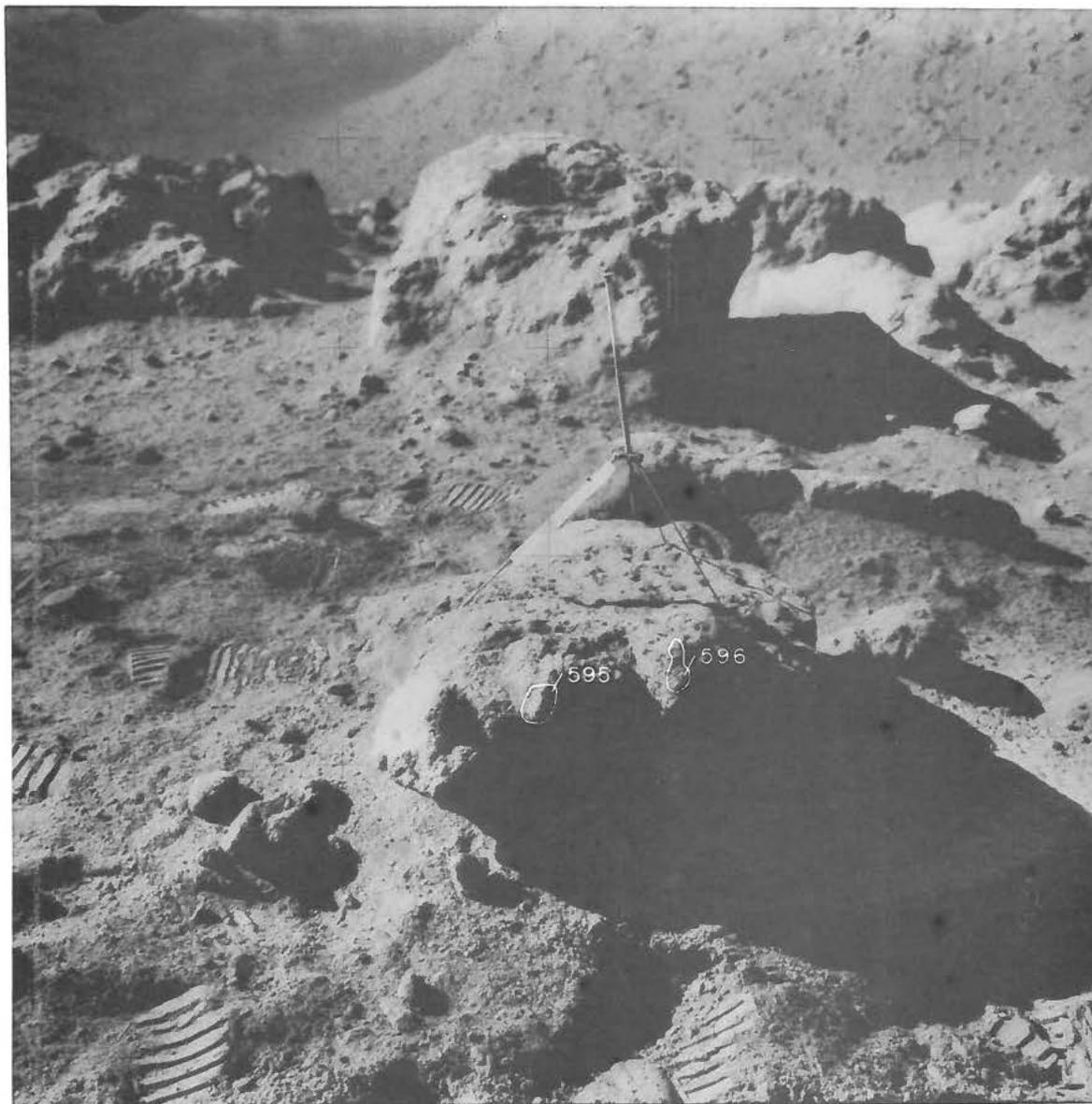


Figure 170. Samples 595, 596 (and vicinity of 597, 598, not identified) collected at station 9a near Hadley Rille. Pre-sampling, cross-sun photograph AS15-82-11143, looking south.

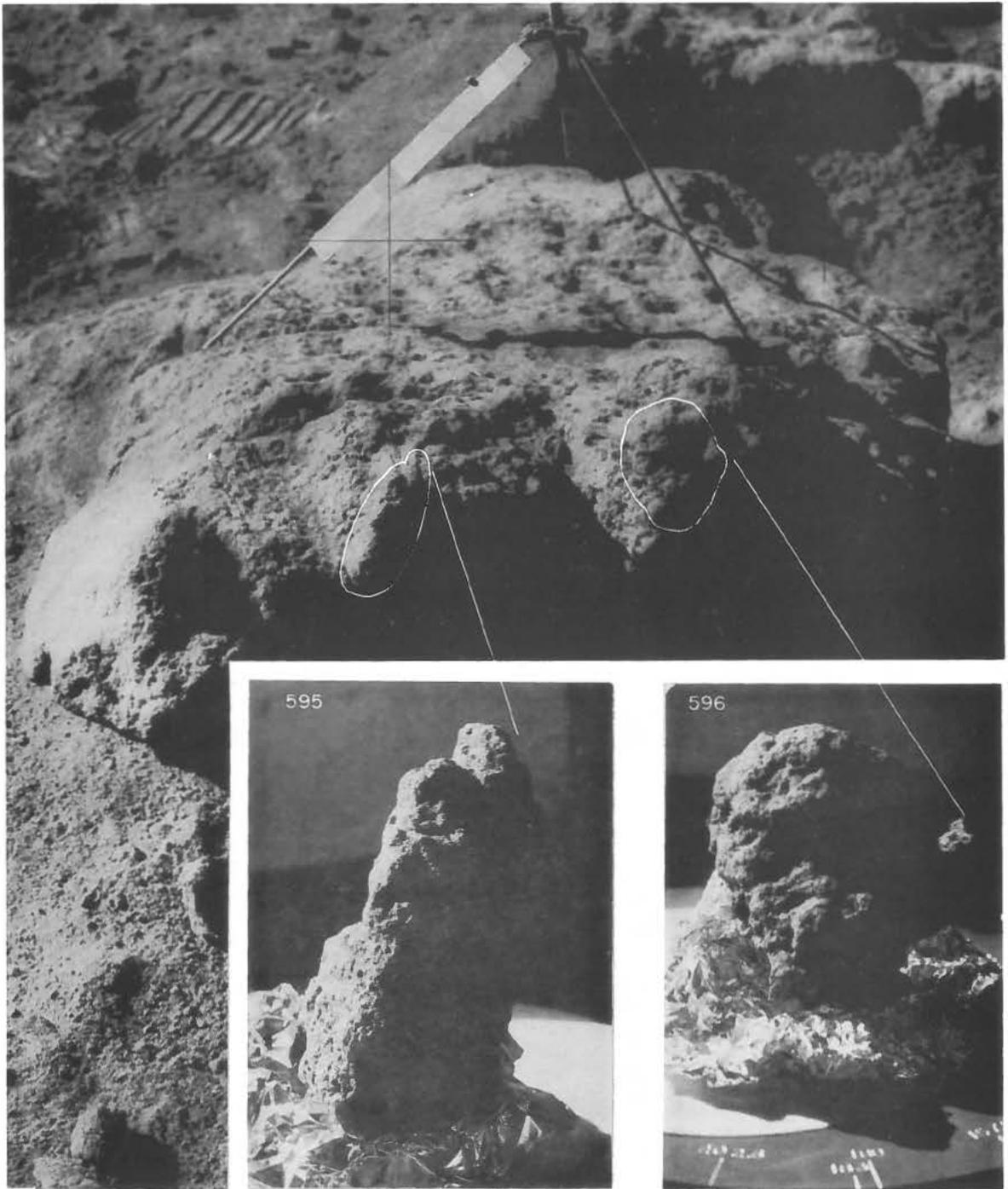


Figure 171. Samples 595 and 596 showing approximate lunar orientation reconstructed in the LRL compared to EVA photograph AS15-82-11143, taken cross-sun, looking south.

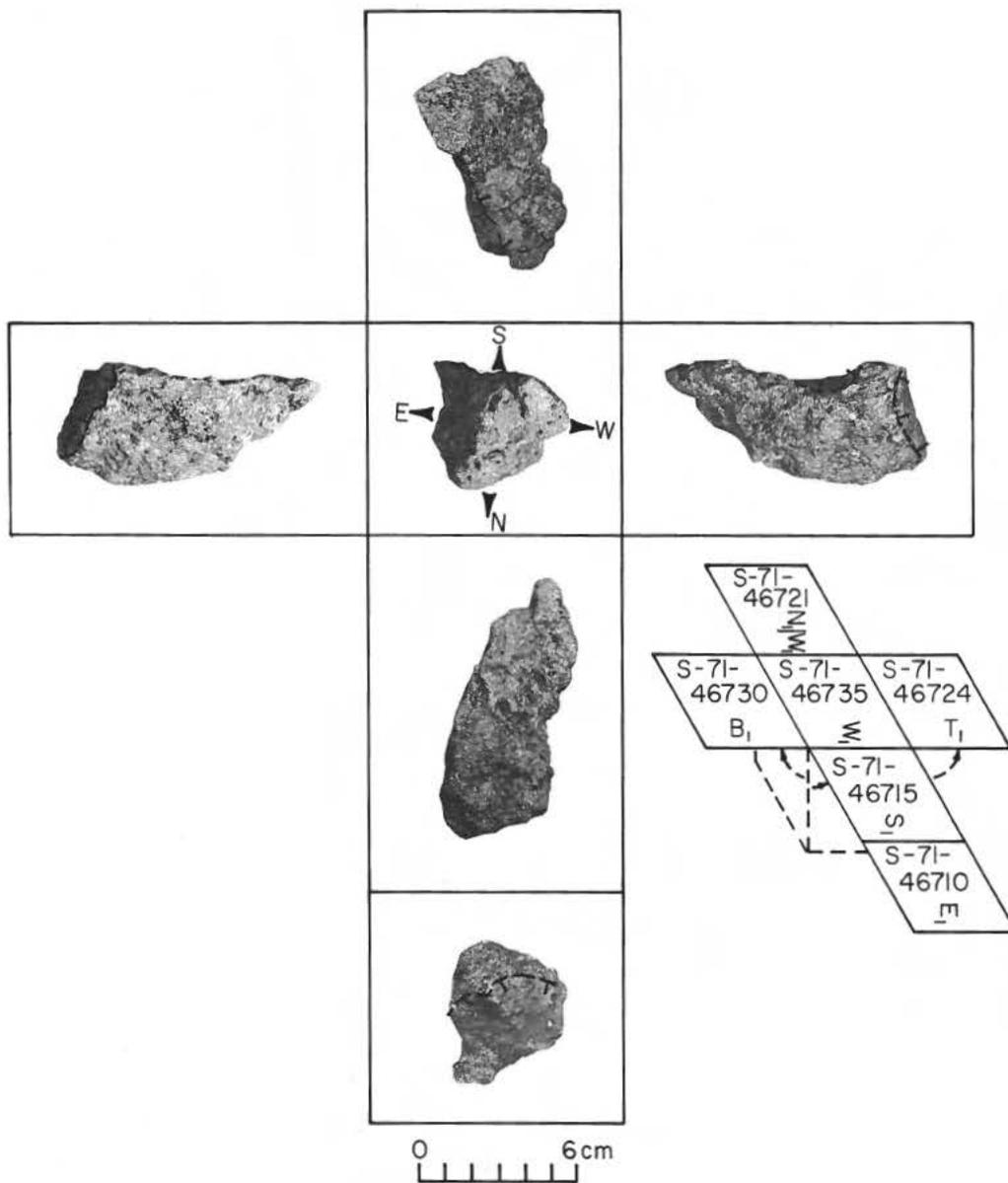
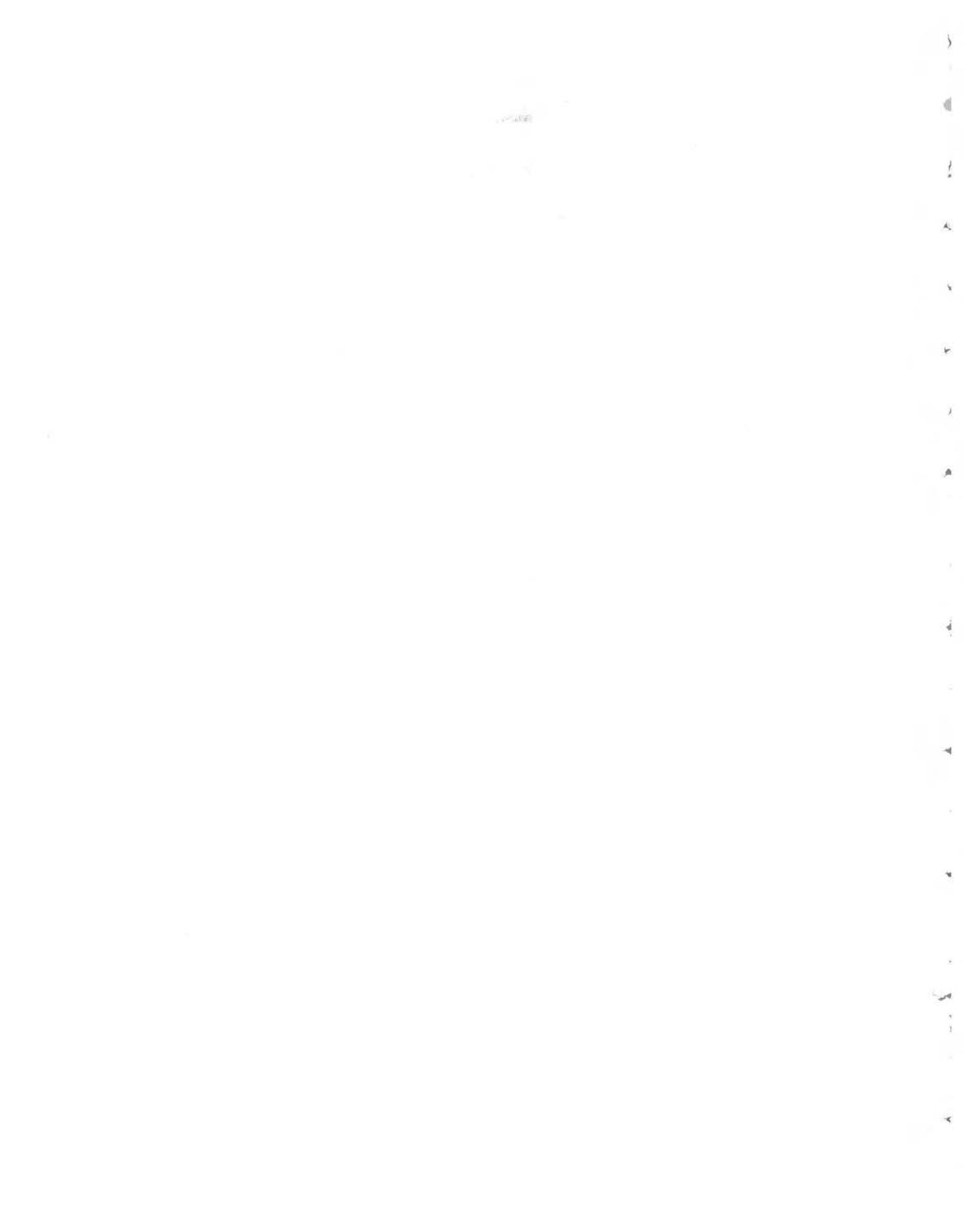


Figure 172. Orthogonal views of sample number 595.



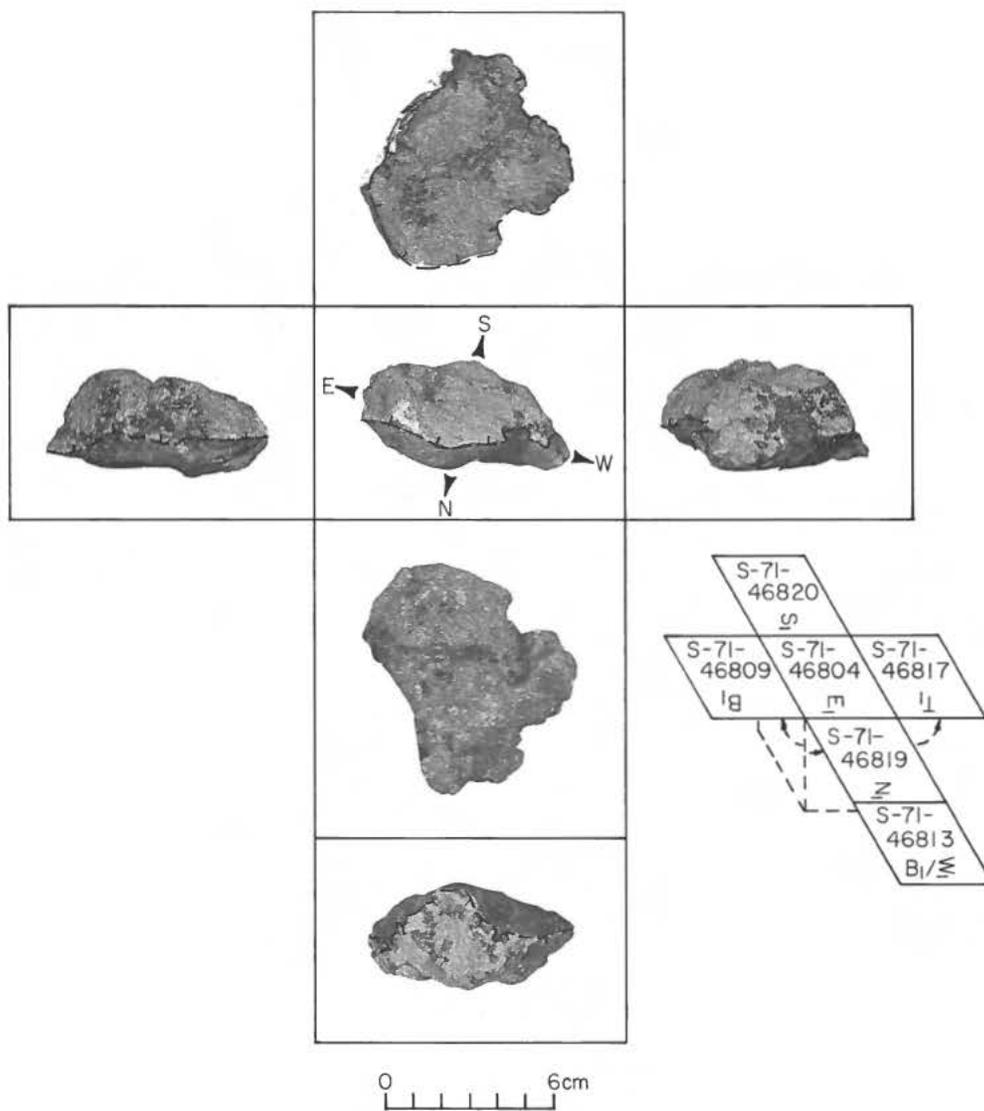


Figure 173. Orthogonal views of sample number 596.

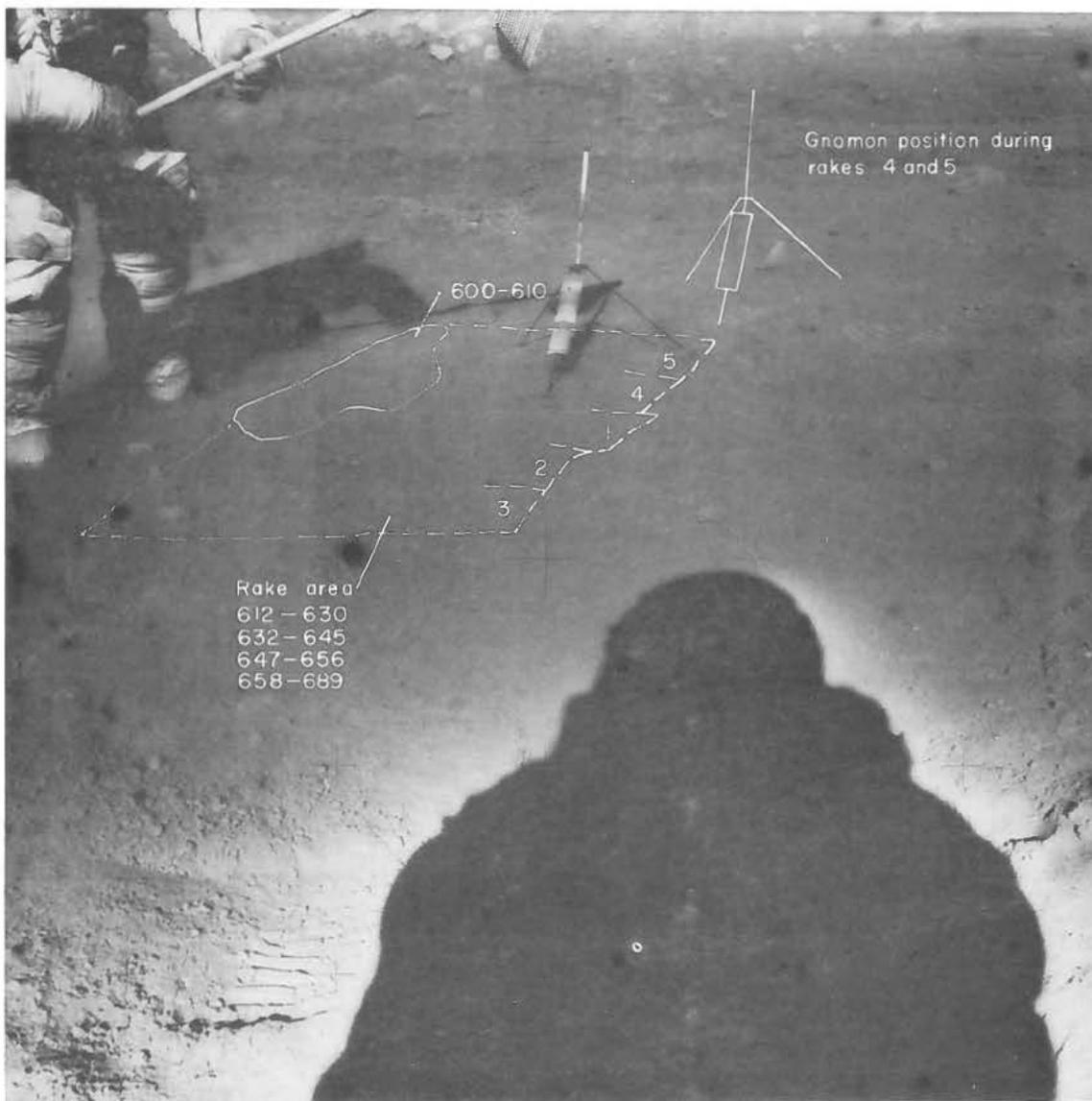


Figure 174. Samples 600-689 collected with rake at station 9a near Hadley Rille. Pre-sampling, down-sun photograph AS15-82-11153, looking west.



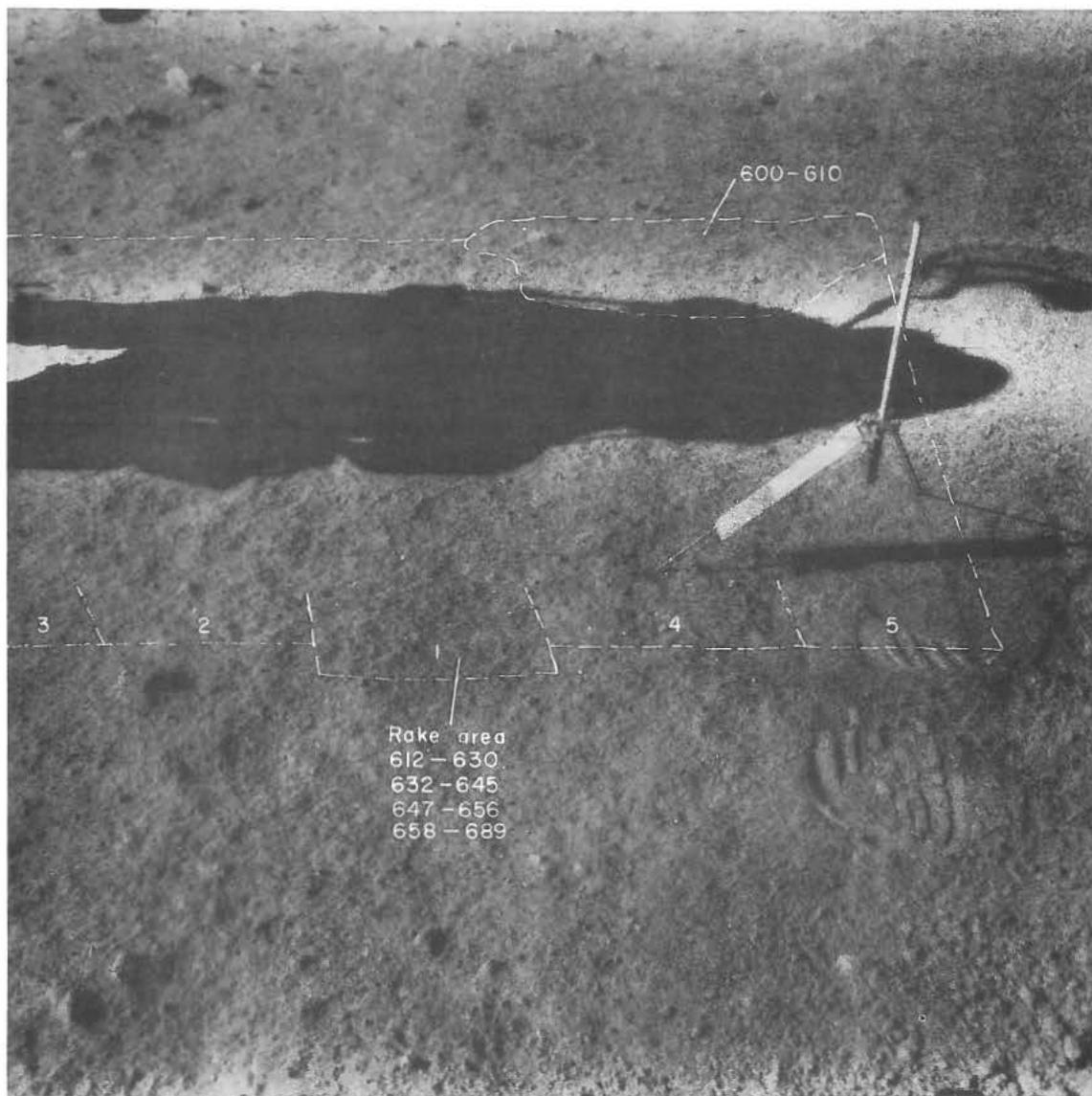
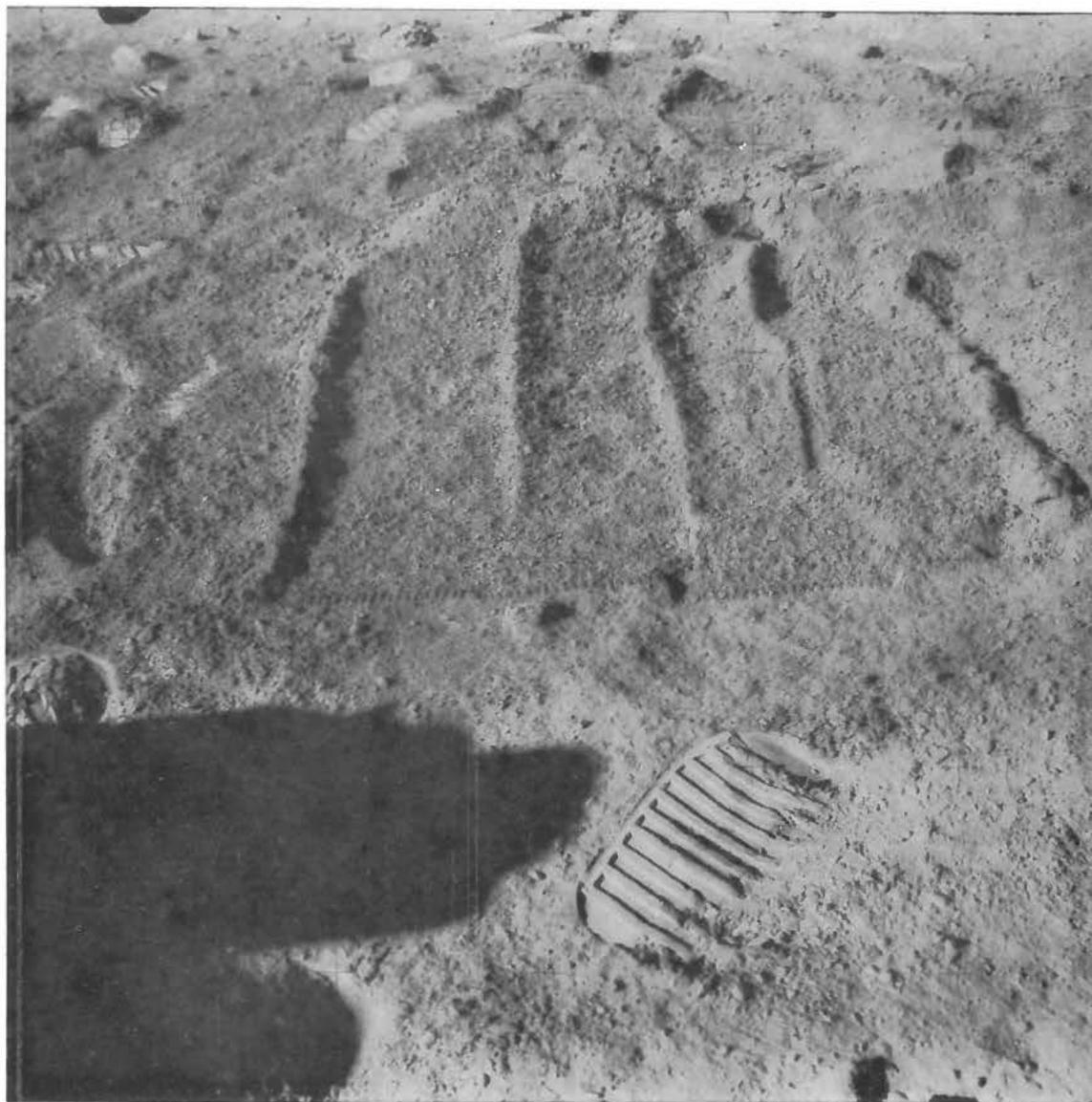


Figure 175. Samples 600-689 collected with rake at station 9a near Hadley Rille (gnomon was moved west before rakes 4 and 5). Pre-sampling, cross-sun photograph AS15-82-11151, looking south.



*Figure 176. Samples 600-689 collected with rake at station 9a near Hadley Rille. Post-sampling, cross-sun photograph AS15-82-11155, looking south.*

Table 4. Photographic documentation of Apollo 15 samples.

| Sample Number | SCB/DB      | Station | Type Sample      | Pre-sample X-Sun St | Down Sun              | Post Sample X-Sun | Locator     | Pan No. | Location in Pan             |
|---------------|-------------|---------|------------------|---------------------|-----------------------|-------------------|-------------|---------|-----------------------------|
| 001-006       |             | 8       | Deep Core        |                     |                       |                   |             | 18      | 92-12427-29                 |
| 007,008       | 1/U-03/L-10 | 2       | Core             | 86-11574-78         | 85-11443-45           |                   | 85-11443,44 | 5,6     | 85-11435,36,47,48           |
| 009           | 5/U-07      | 6       | Core             | 86-11647-50         | 85-11527-29           | 86-11651          | 85-11527-29 | 9,10    | 85-11484,85,511-513         |
| 010,011       | 7/U-09/L-14 | 9a      | Core             | 82-11156,57,60-62   | 85-11158              | 82-11163          | 82-11159    | 21      | 82-11123,24                 |
| 012           | 5/SESC 1    | 6       | Soil             | 86-11641,42         | 86-11644              | 86-11643,45,46    | 85-11525    | 9,10    | 85-11483-85,511-513         |
| 013           | 7/SESC      | LM      | Soil             | 88-11884,85         | 88-11886              | 88-11887          |             | 16      | 87-11838,39                 |
| 014           | 5/SESC 2    | 8       | Soil             | 92-12417,18         | 92-12419,41-43        | 92-12439,40       | 92-12443    | 18      | 92-12423,24                 |
| 015           | 4/          | LM      | 1 rock           |                     | 85-11385,86           |                   |             |         |                             |
|               |             |         |                  |                     | 88-11943,44<br>(Post) |                   |             | 3       | 85-11385-89                 |
| 016           | 4/          | 3       | 1 rock           | 86-11579-81         |                       | 86-11582          |             | 7       | 86-11583,84                 |
| 017-019       | 5/162       | LM      | Glass            | 86-11604-06         | 86-11607              | 86-11608          |             | 3       | 85-11388                    |
| 020-026       | CSB         | LM      | Soil, 2 rocks    | See Pan 3           |                       | See Pan 24        |             | 3       | 85-11391,92                 |
|               |             |         |                  |                     |                       |                   |             | 24      | 88-11932,33,38-41,<br>43-45 |
| 027,028       | 5/162       | LM      | 2 rocks          | 86-11604-06         | 86-11607              | 86-11608          |             | 3       | 85-11388                    |
| 030-034       | 252         | 8       | Soil             | 92-12417,18         | 92-12419,41-43        | 92-12439,40       | 92-12443    | 8       | 92-12423-25                 |
| 040-044       | 252         | 8       | Soil             | 92-12417,18         | 92-12419,41-43        | 92-12439,40       | 92-12443    | 8       | 92-12423-25                 |
| 058           | SCB 6       | ALSEP   | 1 rock           | 92-12410,11         | 92-12412              |                   |             | 17,18   | 87-11850,51<br>92-12422,23  |
| 059           | SCB 6       | ALSEP   | 1 rock           | 92-12415            | 92-12413,14           |                   |             | 17,18   | 87-11853,54<br>92-12437,38  |
| 065           | 156         | 1       | 1 rock           | 86-11530,31         | 85-11416              | 86-11532          | 85-11417    | 4       | 85-11408,09,10              |
| 070-076       | 157         | 1       | Soil, 2 rocks    | 86-11533,34         | 85-11418              | 86-11535          | 85-11419    | 4       | 85-11406,07,08              |
| 080-088       | 158         | 1       | Soil, 4 rocks    | 86-11536,37         | 85-11420              | 86-11538,39       | 85-11421    | 4       | 85-11406,07,08              |
| 090-093,095   | 159         | 2       | Soil, 1 rock     | 86-11549,50         |                       | 86-11551          |             | 5,6     | 85-11435,36,47,48           |
| 100-105       | 187         | 2       | Rake soil, rock  | 86-11567,68         | 85-11441              | 86-11572,73       | 85-11442    | 5,6     | 85-11435,36,47,48           |
| 115-148       | 186         | 2       | Soil, rake rocks | 86-11567,68         | 85-11441              | 86-11572,73       | 85-11442    | 5,6     | 85-11435,36,47,48           |
| 200-204       | 160         | 2       | Soil             | 86-11546,47         | 86-11560              | 86-11558,59       | 85-11440    | 5       | 85-11435,36                 |
| 205           | 161         | 2       | 1 rock           | 86-11546,47,52,53   | 85-11439              | 86-11558,59       | 85-11440    | 5       | 85-11435,36                 |
|               |             |         |                  |                     | 86-11560              |                   |             |         |                             |
| 206           | 160         | 2       | 1 rock           | 86-11546,47         | 86-11560              | 86-11558,59       | 85-11440    | 5       | 85-11435,36                 |
| 210-214       | 180         | 2       | Soil             | 86-11544,45,48      | 85-11439,40           | 86-11556,57       | 85-11440    | 5,6     | 85-11435,36,47,48           |
| 220-224       | 181         | 2       | Soil             | 86-11544,45         | 85-11439              | 86-11556,57       | 85-11440    | 5,6     | 85-11435,36,47,48           |
| 230-234       | 182         | 2       | Soil             | 86-11561-64         | 86-11569              | 86-11565,66       | 86-11569    | 5,6     | 85-11435,36,47,48           |
| 240-245       | 163         | 6       | Soil, 1 rock     | 86-11609-11         | 85-11498,99           | 86-11612-15       | 85-11500    | 9,10    | 85-11493,94,95,515          |

Table 4. (continued)

| Sample Number | SCB/DB    | Station | Type Sample      | Pre-sample X-Sun St | Down Sun                | Post Sample X-Sun | Locator     | Pan No. | Location in Pan            |
|---------------|-----------|---------|------------------|---------------------|-------------------------|-------------------|-------------|---------|----------------------------|
| 250-254       | 164       | 6       | Soil             | 86-11609-11         | 85-11498,99             | 86-11612-15       | 85-11500    | 9,10    | 85-11493,94,95,515         |
| 255-257       | 190       | 6       | 3 rocks          | 86-11629,30         | 86-11631                | 86-11632          |             | 10      | 85-11515                   |
| 259           | 192       | 6       | 1 rock           | 86-11635,36         | 85-11523,24             | 86-11637          |             | 9,10    | 85-11484,85,511-513        |
| 260-264       | 166       | 6       | Soil             | 86-11641,42         | 86-11644<br>85-11525,26 | 86-11643,45,46    | 85-11525    | 9,10    | 85-11483,84,85,<br>511,512 |
| 265-267       | 193       | 6       | 3 rocks          | 86-11638,39         | 85-11523,24             | 86-11640          |             | 9,10    | 85-11484,85,511-513        |
| 268,269       | 192       | 6       | 2 rocks          | 86-11635,36         | 85-11523,24             | 86-11637          |             | 9,10    | 85-11484,85,511-513        |
| 270-274       | 167       | 6       | Soil             | 86-11656            |                         | 86-11657          |             | 9       | 85-11490                   |
| 281-284       | 3/residue |         | Not applicable   |                     |                         |                   |             |         |                            |
| 285-289       | 192       | 6       | 5 rocks          | 86-11635,36         | 85-11523,24             | 86-11637          |             | 9,10    | 85-11484,85,511-513        |
| 290-295       | 188       | 6       | Soil, 1 rock     | 86-11616,17         | 85-11501,02             |                   | 86-11618-20 | 9,10    | 85-11495,515               |
| 297           | 3/residue |         | Not applicable   |                     |                         |                   |             |         |                            |
| 298           | 3/        | 6       | 1 rock           | 86-11621,22         | 85-11503,04             | 86-11623          |             | 10      | 85-11515,16                |
| 299           | 3/        | 6       | 1 rock           | 86-11624,25         | 85-11506                | 86-11628          | 85-11505    | 10      | 85-11516,17                |
| 300-308       | 173       | 7       | Rake soil, rocks |                     | 90-12231,32             | 90-12233,34       | 90-12232    | 12      | 90-12216,17                |
| 310-392       | 172       | 7       | Soil, rake rocks |                     | 90-12231,32             | 90-12233,34       | 90-12232    | 12      | 90-12216,17                |
| 400-405       | 168       | 6a      | Soil, 1 rock     | 86-11658,59         | 90-12199,200            | 86-11660,61       |             | 11      | 90-12187,88                |
| 410-414       | 194       | 7       | Soil             | 86-11662,63         | 90-12223                | 86-11664,65       | 90-12224    | 12      | 90-12201,02,22             |
| 415           | 196       | 7       | 1 rock           | 86-11670,71         | 90-12227,28             | 86-11672          | 90-12228    | 12      | 90-12201,02,22             |
| 417-419       | 194       | 7       | 3 rocks          | 86-11662,63         | 90-12223                | 86-11664,65       | 90-12224    | 12      | 90-12201,02,22             |
| 421-427       | 195       | 7       | Soil, clods      | 86-11666,67         | 90-12225,26             | 86-11668,69       | 90-12226    | 12      | 90-12201,02,22             |
| 431-435       | 170       | 7       | Soil, clods      | 86-11670-73         | 90-12227,28             | 86-11674          | 90-12228    | 12      | 90-12201,02,22             |
| 445           | 171       | 7       | 1 rock           | 86-11690,91         |                         | 86-11692-94       |             | 12      | 90-12201,02,22             |
| 455           | 198       | 7       | 1 rock           | 86-11675,76         | 90-12229                | 86-11677          | 90-12229    | 12      | 90-12201,02,22             |
| 459           | 6/        | 7       | 1 rock           | 90-12235,36         |                         |                   |             | 12      | 90-12217,18                |
| 465-468       | 199       | 7       | 4 rocks          | 86-11678-80         | 90-12230                | 86-11681          | 90-12230    | 12      | 90-12201,02,22             |
| 470-476       | 203       | 4       | Soil, 2 rocks    | 87-11759,60         | 87-11761                | 87-11762,64       | 87-11763    |         |                            |
| 485,486       | 204       | 4       | 2 rocks          | 87-11765,66         | 87-11767,68             | 87-11769,70       | 87-11768    | 13      | 90-12242,43                |
| 495           | 174       | 4       | 1 rock           | 87-11759,60,62      | 87-11761,63             | 87-11764          | 87-11763    |         |                            |
| 498           | 6/        | 4       | 1 rock           | 87-11765            |                         | 87-11769          |             | 13      | 90-12242,43                |
| 499           | 5/        | 4       | 1 rock           |                     | 87-11767,68             | 87-11779          | 87-11768    | 13      | 90-12242,43                |
| 500-508       | 255       | 9       | Soil, 4 rocks    | 82-11105,06         | 82-11107                | 82-11109          | 82-11108    | 20      | 82-11090,91                |
| 510-515       | 273       | 9       | Soil, clods      | 82-11093,94,98,99   |                         | 82-11100          |             | 20      | 82-11089,90                |
| 528-529       | 274       | 9a      | 2 rocks          | 82-11129            | 82-11128                |                   |             | 21      | 82-11119,20                |
| 530-538       | 275       | 9a      | Soil, 4 rocks    | 82-11139,40         | 82-11138                | 82-11141          |             | 21      | 82-11126,27                |

Table 4. (continued)

| Sample Number | SCB/DB    | Station | Type Sample      | Pre-sample X-Sun St | Down Sun    | Post Sample X-Sun | Locator | Pan No. | Location in Pan |
|---------------|-----------|---------|------------------|---------------------|-------------|-------------------|---------|---------|-----------------|
| 545-548       | 278       | 9a      | 4 rocks          | 82-11139,40         | 82-11138    | 82-11141          |         | 21      | 82-11126,27     |
| 555           | BSLSS     | 9a      | 1 rock           | 82-11164            |             |                   |         | 21      | 82-11123,24     |
| 556           | 2/        | 9a      | 1 rock           | 82-11135            | 82-11133,34 |                   |         | 21      | 82-11117,18     |
| 557           | 2/        | 9a      | 1 rock           | 82-11137            | 82-11136    |                   |         | 21      | 82-11110        |
| 558           | 2/        | 9+LM    | 1 rock           | No photos taken     |             |                   |         |         |                 |
| 561-564       | 2/residue |         | Soil             | Not applicable      |             |                   |         |         |                 |
| 565           | 2/residue |         | Chips            | Not applicable      |             |                   |         |         |                 |
| 595-598       | 281       | 9a      | 4 rocks          | 82-11143,44         | 82-11142    | 82-11145,46       |         | 21      | 82-11126,27     |
| 600-610       | 283       | 9a      | Rake soil, rocks | 82-11151,52         | 82-11153    | 82-11154,55       |         | 21      | 82-11122-24     |
| 612-689       | 282       | 9a      | Rake rocks       | 82-11151,52         | 82-11153    | 82-11154,55       |         | 21      | 82-11122-24     |

| Sample Number | Residue From DB | See Sample | Station | Sample Number | Residue From DB | See Sample | Station |
|---------------|-----------------|------------|---------|---------------|-----------------|------------|---------|
| 901           | (156)           | 065        | 1       | 931           | (203)           | 470        | 4       |
| 902           | (157)           | 070        | 1       | 932           | (174)           | 495        | 4       |
| 903           | (158)           | 080        | 1       | 933           | (204)           | 485        | 4       |
| 904           | (159)           | 090        | 2       | 936           | (273)           | 510        | 9       |
| 906           | (160)           | 200        | 2       | 937           | (255)           | 500        | 9       |
| 907           | (181)           | 220        | 2       | 938           | (274)           | 528        | 9a      |
| 908           | (161)           | 205        | 2       | 939           | (275)           | 530        | 9a      |
| 909           | (182)           | 230        | 2       | 940           | (278)           | 545        | 9a      |
| 910           | (186)           | 115        | 2       | 941           | (281)           | 595        | 9a      |
| 911           | (187)           | 100        | 2       | 942           | (282)           | 612        | 9a      |
| 912           | (162)           | 017        | LM      | 943           | (283)           | 600        | 9a      |
| 916           | (190)           | 255        | 6       |               |                 |            |         |
| 917           | (192)           | 258,285    | 6       | 951           | SCB 1           | No photos  | EVA 1   |
| 918           | (193)           | 265        | 6       | 954           | SCB 4           | No photos  | EVA 1   |
| 924           | (196)           | 415        | 7       | 955           | SCB 5           | No photos  | EVA 2   |
| 925           | (170)           | 431        | 7       | 956           | SCB 6           | No photos  | EVA 2   |
| 926           | (198)           | 455        | 7       | 957           | SCB 7           | No photos  | EVA 3   |
| 927           | (199)           | 465        | 7       |               |                 |            |         |

Table 5. Cross reference of lunar samples with locations, photographs, ground elapsed times, and air-to-ground transcript (p. 191-257).

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| <u>Sample Number</u> | <u>Page Number</u> | <u>Sample Number</u> | <u>Page Number</u> | <u>Sample Number</u> | <u>Page Number</u> |
|----------------------|--------------------|----------------------|--------------------|----------------------|--------------------|
| 15001-15006          | 235,238            | 15260-15264          | 213,214            | 15508                | 240-241            |
| 15007-15008          | 202,203            | 15265-15267          | 212,212            | 15510-15514          | 239,240            |
| 15009                | 215-217            | 15268                | 211,212            | 15515                | 239,240            |
| 15010-15011          | 250,251            | 15269                | 211,212            | 15528                | 243                |
| 15012                | 214,215            | 15270-15274          | 217,218            | 15529                | 243                |
| 15013                | 256                | 15281-15284          | N/A                | 15530-15534          | 245,246            |
| 15014                | 235,236            | 15285                | 211,212            | 15535-15537          | 245,246            |
| 15015                | 203-205            | 15286                | 211,212            | 15538                | 245,246            |
| 15016                | 203,204            | 15287                | 211,212            | 15545-15548          | 246                |
| 15017                | 205                | 15288                | 211,212            | 15555                | 252                |
| 15018                | 205                | 15289                | 211,212            | 15556,15557          | 244                |
| 15019                | 206                | 15290-15294          | 207,208            | 15558                | 255                |
| 15020-15024          | 191                | 15295                | 207,208            | 15561-15564          | 255                |
| 15025                | 191                | 15297                | N/A                | 15565                | 255                |
| 15026                | 191                | 15298-15299          | 208-210            | 15595-15598          | 246-248            |
| 15027                | 206                | 15300-15305          | 229,230            | 15600-15604          | 250                |
| 15028                | 206                | 15306                | 229,230            | 15605-15610          | 250                |
| 15030-15034          | 237                | 15307                | 229,230            | 15612-15683          | 249,250            |
| 15040-15044          | 237                | 15308                | 229,230            | 15684-15689          | 249,250            |
| 15058                | 234                | 15310-15314          | 228,229            | 15901                | 191                |
| 15059                | 234                | 15315-15320          | 228,229            | 15902                | 192                |
| 15065                | 191                | 15321-15360          | 228,229            | 15903                | 193                |
| 15070-15074          | 192                | 15361                | 228,229            | 15904                | 198                |
| 15075,15076          | 192                | 15362-15364          | 228,229            | 15906                | 198                |
| 15080-15084          | 193                | 15365-15377          | 228,229            | 15907                | 197                |
| 15085                | 193                | 15378-15384          | 228,229            | 15908                | 198,199            |
| 15086                | 193                | 15385-15388          | 228,229            | 15909                | 200                |
| 15087                | 193                | 15389-15392          | 228,229            | 15910                | 201                |
| 15088                | 193                | 15400-15404          | 218,219            | 15911                | 202                |
| 15090-15093          | 198                | 15405                | 218,219            | 15912                | 206                |
| 15095                | 198                | 15410-15414          | 221,222            | 15916                | 210                |
| 15100-15104          | 202                | 15415                | 224,225            | 15917                | 211,212            |
| 15105                | 202                | 15417-15419          | 221,222            | 15918                | 212                |
| 15115                | 201                | 15421-15424          | 223,224            | 15924                | 224,225            |
| 15116                | 201                | 15425-15427          | 223,224            | 15925                | 225,226            |
| 15117                | 201                | 15431-15434          | 225,226            | 15926                | 226,227            |
| 15118                | 201                | 15435                | 225,226            | 15927                | 227,228            |
| 15119                | 201                | 15445                | 228                | 15931                | 231                |
| 15125                | 201                | 15445                | 226,227            | 15932                | 232                |
| 15135                | 201                | 15459                | 230                | 15933                | 233                |
| 15145-15148          | 201                | 15465                | 227,228            | 15936                | 239,240            |
| 15200-15204          | 198                | 15466                | 227,228            | 15937                | 240,241            |
| 152 15205            | 198,199            | 15467                | 227,228            | 15938                | 243                |
| 15206                | 198                | 15468                | 227,228            | 15939                | 245,246            |
| 15210-15214          | 197                | 15470-15474          | 231                | 15940                | 246                |
| 15220-15224          | 197                | 15475-15476          | 231                | 15941                | 246,248            |
| 15230-15234          | 200                | 15485,15486          | 233                | 15942                | 249,250            |
| 15240-15244          | 206                | 15495                | 232                | 15943                | 250                |
| 15245                | 206                | 15498                | 232                | 15951                | N/A                |
| 15250-15254          | 207                | 15499                | 232                | 15954                | N/A                |
| 15255                | 210                | 15500-15504          | 240,241            | 15955                | N/A                |
| 15256                | 210                | 15505,15506          | 240,241            | 15956                | N/A                |
| 15257                | 210                | 15507                | 240,241            | 15957                | N/A                |
| 15259                | 211,212            |                      |                    |                      |                    |

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER  | SAMPLE WEIGHT, g | SAMPLE TYPE                              | LOCATION & COMMENTS                    | LUNAR-SURFACE PHOTOGRAPHS  | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|--|------------------|--|--|--|----------------------------|--|
| EVA 1 DEPLOY ALSEP, TRAVERSE TO ELBOW CRATER, THE APENNINE FRONT BELOW ST. GEORGE CRATER, AND RETURN |                  |  |  |  |                            |  |
| Traverse to Elbow crater, St. George crater/Apennine Front, and return                               |                  |  |  |  |                            |  |
| Contingency<br>15020   | 38.7             | Contingency Sample Reserve fines         | Near LM                                | No doc.<br>Pan 3<br>DSB 85-11385   | 05:00:04<br>to<br>05:00:06 | LMP - Okay. I'm going to move out and get the contingency sample.<br>- - -<br>I think I can get a - a rock here. It's about 2 inches subrounded in the contingency sample, along with the soil.<br>- - -<br>Okay, I have the contingency sample. I'm taking it back to the ladder. - - - No wonder we slipped, Dave. Boy, that's really soft dirt there around the - the front footpads. |
| 15021  | 500.2            | < 1 mm fines                             |  |  |                            |  |
| 15022  | 10.0             | 1-2 mm                                   |  | Pan 24   |                            |  |
| 15023  | 5.0              | 2-4 mm                                   |  | DSA 83-11943   |                            |  |
| 15024  | 3.6              | 4-10 mm                                  |  |  |                            |  |
| 15025  | 77.3             | breccia                                  |  |  |                            |  |
| 15026  | 1.1              | glass coated microbreccia                |  |  |                            |  |
| CDR - Sure is, isn't it?   |                  |  |  |  |                            |  |
| LMP - Like about 6 inches deep of soft material.   |                  |  |  |  |                            |  |
| -----  |                  |  |  |  |                            |  |
| Bag 156  |                  | Radial sample<br>Single rock<br>fragment | Station 1<br>East rim/<br>Elbow Crater | XSB 86-11530<br>XSB 96-11531<br>XSA 86-11532<br>DSB 85-11416<br>Loc 85-11417 | 05:02:15<br>to<br>05:02:16 | LMP - Okay. A quick radial sample here.<br><br>CDR - Yes. Let me find you one. Here, Jimmer. Right over here's one. I kick dust all over them so easy. How about that one right there? Think we can get that in the bag?   |
| 15055  | 1475.5           | Gabbro                                   |  | Pan 4<br>85-11408<br>to<br>85-11410  |                            | LMP - Yes.<br>- - -<br>LMP - Number 156.<br>- - -<br>LMP - It's very friable.<br><br>CDR - Looks like a breccia all right, quite friable. But, I see a lot of sparklies in there. No glass. Subangular, with lots of dust on it.   |
| -----  |                  |  |  |  |                            |  |

Bag 157

|       |       |               |              |               |          |
|-------|-------|---------------|--------------|---------------|----------|
|       |       | Radial        | Station 1    | XSB 86-11533  | 05:02:17 |
|       |       | sample        | East rim/    | XSB 85-11534  | to       |
|       |       | 2 rock        | Elbow Crater | XSA 86-11535  | 05:02:20 |
|       |       | frags         |              |               |          |
| 15070 | 51.3  | Reserve fines |              | DSB 85-11418  |          |
| 15071 | 100.7 | <1 mm         |              | Loc. 85-11419 |          |
| 15072 | 3.0   | 1-2 mm        |              |               |          |
| 15073 | 1.4   | 2-4 mm        | Pan 4        |               |          |
| 15074 | 1.3   | 4-10 mm       |              | 95-11406      |          |
| 15075 | 809.3 | Gabbro        |              | to            |          |
| 15076 | 400.5 | Gabbro        |              | 95-11408      |          |

CDR - Okay, here's one about the same size. You're a little too big. Take this one right here, Jimmer. Oh, I see a large chunk in there.

LMP - Get a little - get a little soil on this one, huh?

CDR - Okay, Joe. These are buried about - an inch or so. The one I have is subangular; it's covered with dust, but beneath the dust - by golly it's a - It's quite friable and - I see olivine. Look at this, Jim. In the sunlight, would you call that olivine? And, there is a big lath in there. Look at the big lath about a centimeter long and a millimeter wide.

LMP - Yes.

CDR - Plag.

LMP - Yes, let me put this in your bag.

CDR - It's light gray - millimeter-size grains, with - like 2 - millimeter-size phenocrysts in it. Gosh. That one is really something. Look at that - look at that ... there.

- - -  
Bag number 157.

CDR - Let me get you another one. My goodness! Let's get another one out of here.

- - -  
Yes. There's a little one. Okay, let me just stick it in.

LMP - Going to put any soil in there?

CDR - Yes, give me the bag. I'll fill it up, too. Dig a little light trench in there, and ... I got a feeling that Dr Schmitt's going to win his bet. Not that part, get another part. Not where we picked the rock up, - right in front of it. Okay, that's good. Just - hit the - spot, too.

CDR - Okay, ... just try it again. Get another one and just pour real smooth, and I'll catch.

LMP - Okay.

CDR - That a boy. That a boy. Good show. Okay. That ought to be enough for them to take a look at. Okay, 157.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE   | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS               | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|---------------|---------------------|---|----------------|---|
| EVA 1         |                  |               |                     |   |                |   |
| Bag 158       |                  | Radial Sample | Station 1           | XSB 86-11536                            | 05:02:20       | CDR - ... Okay, let's hop on out and get one more. Yes, it's pretty sparse out here. Gosh, we're only - not very far at all. I'm not sure that the ones out here aren't thrown up from ...  |
| 15080         | 73.5             | Reserve fines | Elbow Crater        | XSB 95-11537<br>XSA (frags)<br>86-11538 | to<br>05:02:24 |   |
| 15081         | 105.9            | <1 mm         |                     | XSA (soil)                              |                | LMP - I don't know that this is representative too much of Elbow.   |
| 15082         | 2.0              | 1-2 mm        |                     | 86-11539                                |                |   |
| 15083         | 1.8              | 2-4 mm        |                     | DSB 95-11420                            |                | CDR - I don't think so, either. But, let's pick u a couple - one more anyway, since we're out here. I see a little one. Got to be careful not to kick the dust all over them when you get there. Jim, I see sort of a miniature raindrop here, it looks like.   |
| 15084         | 1.1              | 4-10 mm       |                     | Loc 95-11421                            |                |   |
| 15085         | 471.3            | Basalt        |                     |   |                | LMP - Yes, just behind you is one of those fresh craters, too, with a lot of glass in it.   |
| 15086         | 216.5            | Breccia       |                     | Pan 4                                   |                |   |
| 15087         | 5.7              | Gabbro        |                     | 85-11406                                |                | CDR - Okay, Joe. I've got another subangular fragment here. Rough surface texture. And, knock a little dust off of it, and it looks like a very fine-grained, gray - rather solid frag. I don't see any significant pits or any significant-size crystals in there. It might just be because the surface covering; but just a smooth, fairly hard rock.<br>- - -<br>So far, I haven't seen any pits - pits on any of these. And, most of them are about 1/5th buried. Okay, here's another one that's got - Oh, on - on the underneath side of that - I hope I don't lose these tongs - On the underneath side of this frag, Joe, I can see some soil that is caked on the bottom, about 1 millimeter thick, and maybe down in the place from which I got it, we could sample. Why don't we get it - I'll take a picture and you can scoop that. And there's another one that has a large - - |
| 15088         | 1.8              | Breccia       |                     | to<br>85-11408                          |                |   |
|               |                  |               |                     |   |                | CC - Okay, Dave. We copy. Good description. We'd like a bag number from that, and like for you to move out at your next opportunity, please.  |
|               |                  |               |                     |   |                | CDR - Okay, 158.  |
|               |                  |               |                     |   |                | LMP - Okay, Dave.   |

Post EVA 1 debriefing comments  
by the crew concerning Elbow  
crater

Station 1  
Elbow crater

05:09:06  
to  
05:09:09

CC - ... Could you give us - just a rough guess, a quick rundown as to where the samples at station 1 were taken with respect to the rim of Elbow, and we're interested in distance and direction from the rim. Just a rough guess.

CDR - Okay, Joe, 709, Bravo Echo 5, and we moved out about 200 feet to the east of that point in picking up the C radial sample.

CC - Roger, Dave. Copy that. And coming back to station 1, Elbow crater, could you give us a quick rundown on the changes in rock distribution around Elbow crater and, if possible, maybe even the changes in rock types there. Over.

CDR - Stand by 1.

LMP - Joe, our clocks were running pretty fast when we were there, and I guess - we didn't get a chance to look at the distribution very well. As I remember it, there - there were more blocks - not really blocks, but large fragments, on the order of 6 inches to a foot, more on the southern rim, although it wasn't really heavily concentrated; I'd say 10 percent of the surface at most. There was more on the southern rim than on the northern rim. And the ones we sampled all looked pretty much the same. As I remember, the radial sample didn't show a great difference in rock type. Although, as you know, we just didn't - a chance to do much - looking and thinking then.

05:09:10

CC - But, once again, regarding Elbow crater, Jim, you called out to us a bench around the east side of Elbow and you were looking down into Elbow from higher up on the front. We wonder if you could compare that bench with breaks in the slope of the rille wall. Over.

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AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE   | LOCATION & COMMENTS                | LUNAR-SURFACE PHOTOGRAPHS | SET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|---|------------------------------------|---------------------------|----------------|---|
| -----         |                  |   |                                    |                           |                |   |
| EVA 1         | POST EVA 1       | DEBRIEFING COMMENTS BY THE CREW CONCERNING ELBOW CRATER |                                    |                           |                |   |
| -----         |                  |   |                                    |                           |                |   |
|               |                  |   | Station 1<br>Elbow crater<br>cont. |                           |                | LMP - Joe, when I commented on bench there, I would estimate two or three different levels that are very - were very subdued possible benches in Elbow, and I did not see any immediate relation between those subdued benches in Elbow and the - the rille.  |
|               |                  |   |                                    |                           | 05:09:07       | CC - ... Near Elbow crater, Dave, you mentioned that your footprints exposed white soil. We wonder if this was a common occurrence. Did you observe similar white soil in footprints elsewhere? Over.   |
|               |                  |   |                                    |                           |                | CDR - Joe, I sort of kicked through a rim of a small, 1-meter subdued crater; and, as I did that, I kicked up the white soil. And so I kicked a couple of more times and it spread out; and whether I was - breaking up a very friable rock or not, I don't know. But there was a couple of kickfuls of dirt that was white, and as we came back past it on the return trip to the LM, why I pointed it out to Jim and he saw it too. And I'm not sure whether that was just at that one small crater, or whether that was typical of that particular area. We just didn't have time to look at it. |
| -----         |                  |   |                                    |                           |                |   |

-----  
EVA 1 TRAVERSE FROM STATION 1 TO STATION 2  
-----

Station 2 Pan 5  
St. George 85-11422  
Crater/ to  
Apennine 85-11438  
Front

Pan 6  
85-11446  
to  
85-11465

05:02:34

LMP - There's a large block - looks like about a 5-footer out at 1 o'clock - angular block.  
CDR - Yes, you're right. Why don't we go there? It's - We're - you can tell we're going uphill.  
-----

LMP - Okay; we're going to a big rock here, Joe. It's one we just can't afford to miss. What it is to look at a big block; we're going to look at a big block.

CDR - It's the only big block I see anywhere.  
-----

05:02:39

to  
05:02:41

CDR - There is one boulder! Very angular, very rough surface texture. Looks like it's partially - Well, it's got glass on one side of it with lots of bubbles, and they're about a centimeter across. And one corner of it has got all this glass covering on it; seems like there's a linear fracture through one side. It almost looks like that might be a contact; it is, within the rock. It looks like we have a - maybe a breccia on top of a - a crystalline rock. It's sort of covered with glass; can't really tell, but I can see a - a definite linear feature through one side of it which is about a fifth, and the glass covers both sides of what I guess I'm calling a contact.

CDR - And there's also, parallel to that contact, one surface, which is quite flat, only for about 8 inches or so. Looks like it's been chipped off. The boulder itself is on the order of about a meter across and maybe a - Gee, it looks like a half meter thick or so. It's got a fillet up one side, and the Earth side is a shadow. I can't really tell whether - It doesn't look like it's filled. It's got a fillet on the downslope side, and - the upslope side is - is open and free. As a matter of fact, it looks like it's almost excavated beneath it.

LMP - It looks fairly recent, doesn't it, Dave?

CDR - Yes, it sure does. It sure does, and I can see underneath the upslope side; whereas, on the downslope side, it's piled up. Boy, that is really something.

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE   | LOCATION & COMMENTS                                     | LUNAR-SURFACE PHOTOGRAPHS  | SET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|---------------|---|--|----------------------------|--|
| EVA 1         |                  |               |   |  |                            |  |
| Bag 190       |                  | Fillet soil   | Station 2<br>St. George<br>Crater/<br>Apennine<br>Front | XSB 85-11544<br>XSB 86-11545<br>XSA 86-11556<br>XSA 85-11557<br>DSB 85-11439<br>Loc 85-11440 | 05:02:42<br>to<br>05:02:43 | CDR - Okay. Now, I think to not disturb things too much, let's try the fillet first. I'll get you a bag. And then we'll corner the rock. |
| 15210         | 221.2            | Reserve fines |   |  |                            | LMP - I'm stepping on a piece of glass, right by the tongs. I'll remember that.  |
| 15211         | 163.5            | <1 mm         |   |  |                            | CDR - Watch your boot.   |
| 15212         | 3.6              | 1-2 mm        |   |  |                            | LMP - Yes. See if I can get a bag out. Okay; 180.  |
| 15213         | 2.4              | 2-4 mm        |   |  |                            | - - For the fillet material. I'll get the fillet right here.   |
| 15214         | 0.2              | 4-10 mm       |   |  |                            | CDR - Wait, wait. Before you do, let me poke a picture at it. Okay; go ahead.  |
|               |                  |               |   | 85-11548 shows scoop near fillet (XSD)   |                            | LMP - Little beads of glass in there in some places.   |
|               |                  |               |   | Pan 5<br>85-11435,36   |                            |  |
|               |                  |               |   | Pan 6<br>85-11447,48   |                            |  |
| Bag 181       |                  | Soil          | Station 2<br>St. George<br>Crater/<br>Apennine<br>Front | XSB 86-11544<br>XSB 85-11545<br>XSA 86-11556<br>XSA 86-11557<br>DSB 85-11439<br>Loc 85-11440 | 05:02:44<br>to<br>05:02:46 | CDR - Okay, Now, let's get some typical soil, couple of feet away.   |
| 15220         | 160.5            | Reserve fines |   |  |                            | LMP - Okay. - - - Yes, I'll take it right out here by the gnomon.  |
| 15221         | 290.0            | <1 mm         |   |  |                            | CDR - Yes; good idea. It hasn't been disturbed.  |
| 15222         | 2.4              | 1-2 mm        |   |  |                            | LMP - Okay; I got it.  |
| 15223         | 5.8              | 2-4 mm        |   |  |                            | CDR - Okay; 181.   |
| 15224         | 7.0              | 4-10 mm       |   |  |                            |  |
|               |                  |               |   | Pan 5<br>85-11435,36   |                            |  |
|               |                  |               |   | Pan 6<br>85-11447,48   |                            |  |

|         |       |                                  |   |                            |  |
|---------|-------|----------------------------------|---|----------------------------|--|
| 344 159 |       | Glass<br>piece +<br>soil         | Station 2<br>St. George<br>Crater/<br>Apennine<br>Front | 05:02:45<br>to<br>05:02:46 | CDR - Okay. Now we got the fillet, we got the soil; now we need to sample the rock.  |
| 15090   | 39.3  | Reserve<br>fines                 |   |                            | LMP - Yes.   |
| 15091   | 162.9 | <1 mm                            |   |                            | CDR - Let me get - Give me your hammer.  |
| 15092   | 2.7   | 1-2 mm                           | (Tongs)   |                            | LMP - Okay. I got it. Look at the vesicles in that rock.   |
| 15093   | 0.6   | 2-4 mm                           | XSB 85-11549  |                            | CDR - Those are glass bubbles.   |
| 15095   | 25.5  | glass-<br>coated<br>microbreccia | XSB 85-11550<br>XSA 86-11551                            |                            | LMP - Glass bubbles; yes.  |
|         |       |                                  | Pan 5<br>85-11435, 36                                   |                            | CDR - Okay. Hey, listen; I want to get a closeup of that - that contact. Hold on to this a second, okay? Let me get my trusty tongs. As a matter of fact, if you'll pull the bag out, Jim, I'm going to get a quick selected sample here.  |
|         |       |                                  | Pan 6<br>85-11447, 48                                   |                            | - - -<br>I've got a little piece of glass right there. I can get up the hill to it. Think I can put that in there? See that beauty? Oh, I'll hold the hammer. Okay; don't want to drop that one. But not - Put in some soil. Grab some soil right there with the tongs; it'll stay. It seems to be fairly cohesive here. |

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|         |      |                   |  |  |                |  |
|---------|------|-------------------|--|--|----------------|--|
| 344 160 |      | 1 fragment        | Station 2                                  | XSB 86-11546                                 | 05:02:49       | LMP - Dave, I - I think, up on top here, if you hit it, it will break.   |
| 15200   | 7.7  | Reserve<br>fines  | St. George<br>Crater/<br>Apennine<br>Front | XSB 85-11547<br>XSA 86-11558<br>XSA 85-11559 | to<br>05:02:52 | CDR - Right here?  |
| 15201   | 14.3 | <1 mm             |  | DSA 86-11560                                 |                | LMP - Yes, right there. Yes. Yes, it's coming loose.   |
| 15202   | 0.4  | 1-2 mm            |  | Loc 85-11440                                 |                | CDR - Yes. There it is. I got it. Oh - oops.   |
| 15203   | 0.2  | 2-4 mm            | uphill                                     |  |                | That's it, right there.  |
| 15204   | 0.1  | 4-10 mm           | corner of                                  |  |                | - - -<br>...160 is for the rock that's on the - or the chip off the corner uphill. I hope that makes some sense to you, but when you get the pictures back and it's the one that doesn't appear to have any phenos in it. It just looked like a fine-grained basalt, nonvesicular. Now the other one that Jim - Are you getting it? Here, let me hold the bag for you. |
| 15205   | 92.0 | Glassy<br>breccia | boulder                                    | Pan 5<br>85-11435, 36                        |                |  |

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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|-------------|---------------------|---------------------------|----------------|---|
| EVA 1         |                  |             |                     |                           |                |   |
| Bag 161       |                  | 1 fragment  | Station 2           | XSB 86-11546              | 05:02:52       | LMP - How about doing a dumbbell - dumbbell fragment there beside it? You didn't knock that off, did you? |
| 15205         | 337.3            | Breccia     | St. George Crater/  | XSB 86-11547              | t>             |   |
| 15205,1       | 1.6              |             | Apennine Front      | XSB 86-11552              | 05:02:53       |   |
|               |                  |             |                     | XSB 85-11553              |                | CDR - The dumbbell frag beside it?  |
|               |                  |             |                     | XSA 86-11558              |                | LMP - Yes, hold the bag here. I'll show you what I mean.  |
|               |                  |             |                     | XSA 86-11559              |                | CDR - Okay. No, I think that fell off, Jim. That looks like the same kind of stuff.                       |
|               |                  |             |                     | DS 85-11439               |                | LMP - This one right here?  |
|               |                  |             |                     | DSA 86-11560              |                | CDR - Yes, it fell off when I hit, I guess.   |
|               |                  |             |                     | Loc 85-11440              |                | LMP - But I didn't see it fall off, though.   |
|               |                  |             |                     | Pan 5                     |                | CDR - I didn't either, but I don't think - -  |
|               |                  |             |                     | 85-11435,36               |                | LMP - It looks like a different type of rock.   |
|               |                  |             |                     |                           |                | CDR - It sure does. I'm sure it was there when we started.  |
|               |                  |             |                     |                           |                | LMP - Okay; let me just look at that one.   |
|               |                  |             |                     |                           |                | - - -<br>Lots of glass on it, but can't tell the inside too well.   |
|               |                  |             |                     |                           |                | LMP - Okay; what number is that?  |
|               |                  |             |                     |                           |                | CDR - 161. - - - Frag on the top of the rock.   |

Bag 142

Soil beneath  
boulder

Station 2  
St. George  
Crater/  
Apennine  
Front

XSB 86-11561  
XSB 85-11562  
XSB 86-11563  
XSB 85-11564  
XSA 85-11565  
XSA 86-11566  
DS - Loc  
86-11569

05:02:55  
to  
05:02:57

CDR - Okay; roll it over. - - - Oh, me. It looks like a breccia.

15210      99.1  
15231      233.9  
15232      5.2  
15233      3.8  
15234      1.8

Reserve  
fines  
<1 mm  
1-2 mm  
2-4 mm  
4-10 mm

LMP - It sure is. The top layer is a breccia. You can see it. There, that baby's over.

- - -

A couple of pictures, and we'll get some of that material underneath the rock.

Pan 5  
85-11435,36

CDR - Oh, there's a great big glass bubble on that rock.

- - -

... Jim, get a scoop of that underneath. Let me go around to the other side and get a picture.

- - -

LMP - The bag?

CDR - Okay, let me get it; 182.

LMP - Looks like pristine material, all right.

- - -

270

Station 2  
St. George  
Crater/  
Apennine  
Front  
Big Block

86-11569  
86-11570  
86-11571

05:03:08

CDR - On the bottom of the rock, Joe, it seems to be gray where there's no surface alteration, but there is a surface covering. And in one portion, there's some glass and almost looks like slickenside across the glass, and it's about - 4 inches by 4 inches. And then there's - Oh my, one whole corner of that thing that's loaded with glass. That's just an unreal rock - -

CDR - Hey, Joe, the boulder we just sampled is the only one of its size anywhere to be seen.

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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE             | LOCATION & COMMENTS                               | LUNAR-SURFACE PHOTOGRAPHS  | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|-------------------------|---|--|----------------------------|--|
| EVA 1         |                  |                         |   |  |                            |  |
| Bag 186       |                  | Comprehensive Fragments | Station 2<br>St. George Crater/<br>Apennine Front | XSB 86-11567<br>XSB 95-11568<br>XSA 86-11572<br>XSA 95-11573<br>DSB 85-11441<br>Loc 85-11442 | 05:03:00<br>to<br>05:03:04 | LMP - Okay; I'm going to start to rake, Dave.<br>- - -<br>CDR - Okay. There's one swath - about a meter long.<br>- - -<br>CDR - ... You've got two little frags - Well, that's better than nothing. Got a bag? It's number 186.<br>- - -<br>LMP - Try another couple swaths here - -<br>- - -<br>CDR - Joe, the soil is dark gray, and it's fine grain, and I haven't seen any difference in granularity between the LM and our position at all. It all looks about the same. It's fairly cohesive with very few fragments in it. Jim's getting about three or four with each scoopful - well, two or three.<br>- - -<br>CDR - Well, we don't have much for all that raking.<br>LMP - Okay; why don't - Do you want another swath?<br>CDR - Yes, let's take one more. That's about, I think, all we can do then. There's just not much in there. Boots go in about an inch or so when you press on them. Packs it down nice and smooth. Guess you can see the dust jumping as we walk ...<br>LMP - Not a thing, Dave.<br>- - -<br>Let me take one more.<br>- - -<br>Okay, Dave. That one was a little more fruitful - -<br>CDR - Okay.<br>LMP - - - Looks like about five or six.<br>CDR - Okay; let's call it quits there - -<br>LMP - Yes. |
| 15115         | 4.0              | Basalt                  |   |  |                            |  |
| 15116         | 7.2              | Gabbro                  |   |  |                            |  |
| 15117         | 23.3             | Basalt                  |   |  |                            |  |
| 15118         | 27.6             | Basalt                  |   |  |                            |  |
| 15119         | 14.1             | Basalt                  |   |  |                            |  |
| 15125         | 6.5              | Basalt                  |   | Pan 5<br>85-11435,36   |                            |  |
| 15135         | 1.6              | Microbreccia            |   |  |                            |  |
| 15145         | 15.1             | Breccia                 |   | Pan 6<br>85-11447,49   |                            |  |
| 15146         | 1.0              | Breccia                 |   |  |                            |  |
| 15147         | 3.7              | Soil breccia            |   |  |                            |  |
| 15148         | 3.0              | Soil breccia            |   |  |                            |  |

|         |       |                        |   |  |                            |   |
|---------|-------|------------------------|---|--|----------------------------|---|
| Bag 187 |       | Comprehensive<br>Fines | Station 2<br>St. George<br>Crater/<br>Apennine<br>Front | XSB 96-11567<br>XSB 85-11568<br>XSA 86-11572<br>XSA 86-11573<br>DSB 95-11441<br>LCC 95-11442 | 05:03:04<br>to<br>05:03:05 | - - -<br>LMP - Do you want soil with that comprehensive?  |
| 15100   | 281.0 | Reserve<br>Fines       |   |  |                            | CC - Roger. One bag soil with the comprehensive,<br>and then double core.   |
| 15101   | 637.6 | <1 mm                  |   |  |                            | CDR - Okay. Let me picture this here where my big<br>foot went.   |
| 15102   | 12.2  | 1-2 mm                 |   |  |                            | - - -   |
| 15103   | 4.1   | 2-4 mm                 |   |  |                            | LMP - ... I've got 187 for the soil.  |
| 15104   | 1.5   | 4-10 mm                |   | Pan 5<br>95-11435,36   |                            |   |
| 15105   | 5.6   | Basalt                 |   | Pan 5<br>95-11447,48   | (05:03:01)                 | CDR - Joe, the soil is dark gray, and it's fine<br>grain, and I haven't seen any difference<br>in granularity between the LM and our<br>position at all. It all looks about the<br>same. It's fairly cohesive with very few<br>fragments in it. ... |

---

|               |       |                |   |  |                            |  |
|---------------|-------|----------------|---|--|----------------------------|--|
| J-03/<br>L-10 |       | Double<br>Core | Station 2<br>St. George<br>Crater/<br>Apennine<br>Front | XSB 95-11574<br>XSB 86-11575<br>XS During<br>36-11576<br>46-11577<br>95-11578<br>DS 85-11445<br>Loc 85-11443<br>LCC 95-11444 | 05:03:05<br>to<br>05:03:16 | CDR - Okay; the next thing on the agenda is a<br>double core.  |
| 15008         | 510.2 | upper          |   |  |                            | LMP - Yes. Okay; I'm going to go over and con-<br>figure for it.   |
| 15007         | 768.2 | lower          |   | Pan 5<br>95-11435,36<br><br>Pan 5<br>85-11447,48   |                            | CDR - Oh, we've got a good place here. We've got<br>a fairly deep crater; it must be about 10<br>meters across, and a meter and a half or so<br>deep, and we'll pick the rim of that - There's<br>a fresh impact crater in - in the rim anyway,<br>which looks like it pulled out some - - |
|               |       |                |   |  |                            | CDR - Is that as far as you can push it, Jim?  |
|               |       |                |   |  |                            | LMP - That's as far as I can push it. I got the<br>picture; go ahead.  |
|               |       |                |   |  |                            | CDR - Okay. It's a - We've got one full core,<br>second core is going in about 2 inches per<br>hammer stroke.  |
|               |       |                |   |  |                            | CDR - And we've got almost a second core. Got<br>another couple of inches to go, Jim.<br>Doing good.   |
|               |       |                |   |  |                            | CDR - Okay; that's good, man. All the way in.<br>Good show.  |
|               |       |                |   |  |                            | CDR - Okay. Pull it out very gently. Nice. Nice.<br>Easy does it. That's nice. Coming out very<br>clean. Looks clean. Hold it steady. Got a<br>good one. Okay. Come on over this way a<br>little. Cap for it. ...  |
|               |       |                |   |  |                            | LMP - Give me the cap. I'll put it on, Dave.   |
|               |       |                |   |  |                            | CDR - Okay. Good idea.   |

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER             | SAMPLE WEIGHT, g | SAMPLE TYPE          | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS   | GST DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------------------|------------------|----------------------|---------------------|---|----------------------------|--|
| -----                     |                  |                      |                     |   |                            |  |
| EVA 1                     |                  |                      |                     |   |                            |  |
| -----                     |                  |                      |                     |   |                            |  |
| 15009                     |                  |                      |                     |   |                            | - - -  |
| 15007                     |                  |                      |                     |   |                            | CDR - Okay. Rammer went in about 6 inches.   |
| cont.                     |                  |                      |                     |   |                            | CC - And, Dave, we're standing by for a number on the core.  |
|                           |                  |                      |                     |   |                            | CDR - Yes, the top one is 03, Joe.   |
|                           |                  |                      |                     |   |                            | - - -  |
|                           |                  |                      |                     |   |                            | LMP - Know what the other one was?   |
|                           |                  |                      |                     |   |                            | - - -  |
|                           |                  |                      |                     |   |                            | LMP - It's the middle one in ... Dave's sample bag.  |
| -----                     |                  |                      |                     |   |                            |  |
| SCP 4<br>PSR "A"<br>15016 | 923.7            | Vesicular basalt     | Station 3           | XSB 46-11577<br>XSB 46-11580<br>XSB 46-11581<br>XSA 46-11582<br>Partial pan 7<br>46-11594 | 05:03:43<br>to<br>05:03:47 | CDR - Oh, there's some vesicular basalt right there, boy. Oh, man! Hey, how about it, let's - just hold on 1 second, we've got to have - -<br><br>LMP - Okay; we're stopping.  |
| -----                     |                  |                      |                     |   |                            |  |
| SCP 4<br>PSR "A"<br>15015 | 4770.2           | Glass coated breccia | Near LM             | Pin 3<br>DSB 45-11385<br>Pin 24<br>DSA 93-11943   | 05:06:02<br>to<br>05:06:04 | CDR - And I'm going to - - pick up a couple of rocks. Yes, sir. Oh, my! I couldn't resist this one, Jim.<br><br>LMP - That the glass one?<br><br>CDR - Oh, look at what I got! You wouldn't believe it! Okay, pick up the ETB.<br>- - -<br>Okay, here's the ETB. How about handling that with care; there's a piece of fragile in there. I'll get it to you. |
| -----                     |                  |                      |                     |   |                            |  |

POST EVA 1 DEBRIEFING COMMENTS BY THE CREW CONCERNING SAMPLES

SCB 4

05:09:17

CDR - ... We've got a couple of surprises for you. We have one fragment on the order of 6 inches which is a - a fairly well rounded, highly vesicular basalt with vesicles on the order of 3 millimeters all over it, apparently quite old and rounded, and it's a brownish gray. We also have a - a large piece of glass, just sheer glass, apparently, which is about a foot long and about 6 inches wide and very rough-textured surface; and that was the one that was right out the front window here that I described yesterday. And the basalt we picked up halfway back when I had to change my seatbelt; I saw it on the ground, and I just couldn't resist it. And it's unlike anything you've seen from the Moon before as is the large piece of glass.

FSR "A"  
15016

FSR "B"  
15015

SCB 4  
FSR "B"  
15015  
Cont.

Near LM

04:11:34

Crew Comments pre EVA 1 LM window description

CDR - ... I got to tell you about a rock that's right out at 12 o'clock, right - almost at the radar antenna shadow, and it's going to be gone pretty soon. There's a - a dark, black, angular fragment which is on the order of probably - I'd say 6 to 8 inches across. It's got some light-colored apparent dust on it. It's unique on the surface. All the other fragments appear to be white. And this one really looks like a jewel. You can think about that for awhile.

04:12:27  
to  
04:12:29

CC - Dave, while you're sipping your - cold tomato soup there, was the black rock that you called out to us on a crater rim?

CDR - Yes, it is, Joe. It sure is. And it's a typical crater to see. It's quite a subtle crater, but it's out - well, LM shadow being like 30, maybe 28 meters now. It's probably about 40 meters away, the rim of the crater. And that black rock is sitting right on the rim.

CC - Roger.

CDR - Hey, Joe. Jim's just pointed out another black one now that must be 300 meters out. And it's so dark that it looks like a shadow. It's just coal black, and it looks like it might be about the same size.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER   | SAMPLE WEIGHT, g | SAMPLE TYPE                      | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS                    | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES  |
|---|------------------|----------------------------------|---------------------|--|----------------|--|
| EVA 1   |                  |                                  |                     |  |                |  |
| SCB 4<br>FSR "B"<br>15015<br>cont.  |                  |                                  |                     |  |                | <p>CC - Roger, Dave. Incredible. While you're peeking out there, do you have any further observations on the abundance, size, and distribution of the frags in the nearby field of view?</p> <p>CDR - Yes. That's what we found here. Yes. I'd say that, in the - in the near field, the surface is covered by - probably less than 1 percent of fragmental debris. And, of that debris, I'd say 70 percent of it is on the order of an inch to 2 inches, or less. And maybe the other 30 percent seems to be in a range of maybe 4 or 5 inches, something like that; no large frags anywhere. They mostly -</p> <p>Okay. Most the fragments are light colored, except for the two that we - we mentioned to you. In fact, they all look - they look white. I can see some that are just stark white and some that are a lighter gray.</p> |
| -----   |                  |                                  |                     |  |                |  |
| Post EVA 1  | Weight Report    |                                  |                     |  | 05:07:45       | <p>CDR - Okay. I've got some weights for you, if you're ready to copy.</p> <p>CC - Go ahead, Dave. We're ready.</p> <p>CDR - Okay. SRC number 1 is stowed. It weighed 36 pounds. And collection bag number 4 weighs 15 pounds.</p>   |
| -----   |                  |                                  |                     |  |                |  |
| *****   |                  |                                  |                     |  |                |  |
| EVA 2 TRAVERSE TO THE APENNINE FRONT, SPUR CRATER, DUNE CRATER AND RETURN |                  |                                  |                     |  |                |  |
| -----   |                  |                                  |                     |  |                |  |
| Bag 162   |                  | Glass sphere and other fragments | Near LM - "Aggie"   | XSB 85-11604<br>XSB 86-11605<br>XSB 86-11606 | 05:22:57       | CDR - Joe, bag number 162 has that little glass Aggie in it.   |
| 15017   | 9.9              | Broken glass sphere "aggie"      |                     | XSA 86-11608<br>DSB 86-11607                 |                | Plus a - another couple little samples that were sitting there. Okay, we'll get you - up. Okay, hand me the hammer.  |
| 15018   | 5.7              |                                  |                     | Pan 3<br>85-11392                            | (04:12:31)     | Crew Comments from pre EVA 1 LM Window Description:  |

Bag 162 continued  
15019 1.2

15027 51.0 Breccia  
15028 58.9 Breccia  
15029,1 0.5

CDR - ... I'm just looking down right in front of the LM here to try and get your relative abundance, and I was about ready to say that maybe, of these inch frags, there might be five or six in a square meter. And I see what appears to be a round glassy ball. It's shiny, it casts a rounded shadow, and it looks about the size - oh, maybe an - an inch or so.

CC - Roger, Dave. And, for the benefit of our fine Flight Director, maybe the name of that should be called an Aggie.

CDR - Okay, Joe. We'll call that one our first Aggie.

---

| Bag 163          | Glass        | Station 6    | Pan 9        | 05:23:58 |
|------------------|--------------|--------------|--------------|----------|
| 15240 67.1       | Reserve      | Apennine     | 85-11493     | to       |
| 15241 197.4      | <1 mm        | Front; floor | to           | 06:00:01 |
| 15242 18.9       | 1-2 mm       | of small     | 85-11495     |          |
| 15243 31.8       | 2-4 mm       | fresh        | Pan 10       |          |
| 15244 32.6       | 4-10 mm      | crater with  | 85-11515,16  |          |
| 15245,1-12 28.7  | Breccia      | glass in     |              |          |
| 15245,33-65 63.3 | Breccia with | center       |              |          |
|                  | glass coats  |              | XSB 85-11609 |          |
|                  | Agglutinates |              | XSB 86-11610 |          |
| 15245,66-89 23.5 |              |              | XSB 86-11611 |          |
|                  |              |              | XSA 85-11612 |          |
|                  |              |              | XSA 86-11613 |          |
|                  |              |              | XSA 85-11614 |          |
|                  |              |              | XSA 86-11615 |          |
|                  |              |              | DSB 85-11499 |          |
|                  |              |              | DSB 85-11499 |          |
|                  |              |              | Loc 85-11500 |          |

CDR - Okay. Let's go up first, so we can come downhill. And, there's one of those fresh little craters.

LMP - Yes.

CDR - Let's go sample that one.

LMP - Got glass in the bottom.

And we're going to sample the glass in the middle of it.

CDR - Yes. Start with the middle, and we'll pick up the rim, too. 163.

CC - Copy 163.

LMP - It all felt kind of welded together. - - -  
I hope it stays together for us.

Like fragments all glued together. What an intricate pattern.

CC - Okay, Dave. And is that still bag number 163?

CDR - Yes.

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE       | LOCATION & COMMENTS      | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|-------------------|--------------------------|---|----------------------------|--|
| EVA 2         |                  |                   |                          |   |                            |  |
| Bag 164       |                  | Soil              | Rim of same crater where | XSB 86-11609  | 06:00:01                   | CDR - Yes. Yes, the next one coming up is 164. And, why don't you skip the rim there,  |
| 15250         | 207.0            | Reserve fines     | sample Bag 163 was taken | XSB 85-11610<br>XSB 96-11611<br>XSA 95-11612  |                            | LMP - A little more?   |
| 15251         | 390.9            | <1 mm             |                          | XSA 86-11613  |                            | CDR - Yes, let's get a good bag full.  |
| 15252         | 3.3              | 1-2 mm            |                          | XSA 86-11614  |                            |  |
| 15253         | 4.0              | 2-4 mm            |                          | XSA 95-11615  |                            |  |
| 15254         | 1.2              | 4-10 mm           |                          | DSB 85-11498<br>DSB 85-11499<br>LOC 35-11500<br>Pan 9<br>95-11493<br>to<br>35-11495 |                            | CDR - Okay, Joe. It's very fine light gray - the rim is. Very fine.  |
| -----         |                  |                   |                          |   |                            |  |
| Bag 188       |                  | Rock microbreccia | Station 6 Apennine Front | XSB 96-11616<br>XSB 96-11617<br>DSB 95-11501  | 06:00:02<br>to<br>06:00:06 | CDR - Okay, Jim. Let's find ourselves a couple of frags down here. Here's a - there are three within easy range over here. - - -<br>Right there in front of you, Jim. That big one. Get - get that one.  |
| 15290         | 55.0             | Reserve fines     |                          | DSB 85-11502<br>Loc 95-11618  |                            |  |
| 15291         | 169.0            | <1 mm             |                          | Loc 86-11619  |                            |  |
| 15292         | 5.4              | 1-2 mm            |                          | Loc 86-11620  |                            |  |
| 15293         | 5.7              | 2-4 mm            |                          |   |                            | CC - Okay, Jim. And are you still scooping samples?  |
| 15294         | 10.2             | 4-10 mm           |                          | Pan 9   |                            |  |
| 15295         | 947.3            | Breccia           |                          | 95-11495<br><br>Pan 10<br>35-11515  |                            | LMP - ... - we're sampling a rock right now. - - -<br>The number on this bag is 188.   |
|               |                  |                   |                          |   |                            | CC - Roger, Jim. Copy 188. And have you noticed a variety of rock types or just one general kind?  |
|               |                  |                   |                          |   |                            | CDR - Okay. Let us go through them, Joe, as we pick them up, because we can't tell any difference as they sit on the surface. They're all covered with dust. And, the first one here is a fine-grained breccia - a microbreccia. And, it's got - it looks like a third order with white clasts in it. The matrix is dark black, and it has glass within a fracture on the side. Not unlike some of the 14's.<br>- - -<br>- - - |

Bag 199  
cont.

LMP - I'll put some soil in.

CDR - Get that other frag right next to it, Jim. Here let me - I'll - I'll get it. Okay, good boy.

CDR - And, Joe, the - the soil is very powdery here.

LMP - It just looks the same - just the ... here.

CDR - Okay. Same thing. Same kind of fragment.

Okay. You give me the bag, and why don't you take a little scoop right there by the side of the - -

- - -

- - where those two were.

- - -

LMP - I - I got to get back uphill. I've got most of it, I think.

CDR - That's good. That's fine.

Okay, 188, to confirm again.

---

|         |        |              |            |              |          |
|---------|--------|--------------|------------|--------------|----------|
| SCB 3   |        |              | Station 6  | XSB 96-11621 | 06:00:07 |
| PSR "C" | 1731.4 | fractured    | Apennine   | XSB 96-11622 | to       |
| 15298   |        | Microbreccia | Front      | ISA 96-11623 | 06:00:09 |
|         |        |              | 20% buried | DSB 85-11503 |          |
|         |        |              | subangular | DSB 95-11504 |          |

Pan 10  
35-11515, 16

CDR - Okay. Okay; this is a fairly large subangular fragment, which is about 20 percent buried. I'm not sure we'll get that in the bag.

LMP - I don't think we will, Dave.

CDR - Well, we've got it anyway. See what it looks like here.

- - -

On the bottom - See, it looks like - a light gray microbreccia with some white clasts of millimeter size in it, and that's about all. And, the bottom side has slickensides. And I do see some glass spattered on one side. And I also see - one little - looks like an orange crystal in there - like it might be a little piece of olivine. It's got definite reddish-orange color to it.

- - -

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER                             | SAMPLE WEIGHT, g                     | SAMPLE TYPE   | LOCATION & COMMENTS  | LUNAR-SURFACE PHOTOGRAPHS  | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---|--------------------------------------|---|--|--|----------------------------|---|
| EVA 2                                     |                                      |   |  |  |                            |   |
| SCB 3<br>PSR "C"<br>15298<br>cont.        |                                      |   |  |  |                            | CDR - This is definitely a different kind of breccia, Joe. It - it's only got light-gray millimeter-size clasts in it, with a fine-grained gray matrix. In the clasts, there are about - gee, I'd say 10 percent of the total frag. So it's - it's somewhat different. Here, I can hold it with both hands, if you can stick it in. Let me hold the bag.<br>- - -<br>Okay. That's going in your collection bag as a single. And, I think you can remember it, Joe. Sorry about the bag; it just fell. I let it go. It's got slickensides on it.   |
| SCB 3<br>PSR "D"<br>15299                 | 1691.7                               | fractured Breccia                                     | Station 6 Apennine Front<br>Fragment made small secondary crater - travelling east to west | XSB 85-11624<br>XSB 86-11625<br>XSA 85-11628<br>LJC 85-11505<br>DSB 85-11506<br>Impact site 86-11626<br>96-11627 | 06:00:11<br>to<br>06:00:14 | CDR - Jim, I would say that this - that this fragment here hit right before its position. You see that little spot? See that little spot right there in front?<br><br>LMP - Yes.<br><br>CDR - I think that rock hit there.<br><br>LMP - Yes. You can convince me of that.<br><br>CDR - ... We'll just have to take a look at it. We can get the pictures here. Wonder from whence it came. If it - if it did hit there it was traveling - -<br><br>LMP - Traveling west.<br><br>CDR - Yes. East to west, and it left a little mark about a foot from its present position. And its present position is on the surface, to about 4 inches, subangular. And we'll pick it up and take a look at it. As a matter of fact, I'll see if I can't get a closeup of the little spot that it hit here. Now, if I can lean down. Okay. Did you get the down-sun, Jim? |
| 15281<br>15282<br>15283<br>15284<br>15297 | 107.0<br>9.7<br>13.3<br>38.2<br>39.4 | <1 mm<br>1-2 mm<br>2-4 mm<br>4-10 mm<br>Breccia chips | Residue from SCB-3   |  |                            |   |

SCB 3  
FSR "D"  
15299  
cont.

---  
CDR - Man, it's really covered. But it's a very rough surface, very sharp, basically a subangular rock, but with quite a jagged, craggy surface on it. And I can see some spots in there. I guess I'd just have to call it a breccia. It'll never fit in there. Just let me put it in your bag.

LMP - Okay.

CDR - And I think we have it fairly well documented. It's in collection bag number 3, which will help you keep track of it.

---

|         |       |              |           |              |          |
|---------|-------|--------------|-----------|--------------|----------|
| Bag 190 |       |              | Station 6 | XSB 86-11629 | 06:00:15 |
| 15255   | 240.4 | breccia      |           | XSB 85-11630 | to       |
| 15256   | 201.0 | basalt       |           | XSA 86-11632 | 06:00:17 |
| 15257   | 22.5  | microbreccia |           | DSB 86-11631 |          |

Pan 10  
85-11514, 15

CC - Dave, ... Do you think this is a good area for a rake sample?

CDR - No, Joe. Definitely not.

---  
CDR - Okay, Joe. Okay; another little microbreccia. Bag number is 190.

---  
CDR - You can take another. Get this other one here.

CDR - Oh, boy. Look at the bottom of that, Jim.

LMP - All glassy, isn't it?

CDR - Yes, I hope. Glass all over the bottom of that one. And it looks like another microbreccia. And I don't see any pits in any of these, at all. I do see a couple of glass - yes, there, this one's got a couple of very small glass-filled pits, but most of them are pitless. Okay; 190.

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE          | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS  | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|----------------------|---------------------|--|----------------------------|---|
| EVA 2         |                  |                      |                     |  |                            |   |
| Bag 192       |                  | 3 frags breccia      | Station 6           | XSB 86-11635<br>XSB 86-11636<br>XSA 86-11637<br>DSB 95-11523<br>DSB 85-11524 | 06:00:19<br>to<br>06:00:23 | CDR - Okay. Okay; let's move down here. Downhill, with care. Now, it looks like the same - Look down at the bottom of that crater - another little crater with a bunch of debris in it.<br>- - -  |
| 15259         | 0.7              | microbreccia         |                     |  |                            |   |
| 15268         | 11.0             | microbreccia         |                     |  |                            |   |
| 15269         | 6.0              | microbreccia, glassy |                     | Area photos:   |                            | CDR - Hey, look at the little bench on this one.<br>- - -   |
| 15285         | 264.2            | breccia              |                     | 86-11633   |                            |   |
| 15286         | 34.6             | basalt glass         |                     | 86-11634   |                            | LMP - Yes, I was going to remark about that on the - the downslope side.<br>- - -   |
| 15287         | 44.9             | breccia              |                     | Pan 9  |                            |   |
| 15288         | 70.5             | breccia, glassy      |                     | 85-11484,85  |                            |   |
| 15289         | 24.1             | breccia              |                     | Pan 10<br>85-11511,12  |                            | CDR - Jim, I'd suggest we go down to that little bench.<br>LMP - Yes. We could actually walk in. We could do a radial sample.<br>CDR - Yes. Boy, look at how this zero phase just wipes everything out. Man. We can get this here easy - because we don't want to go too far downhill, because we don't have ... climb back up to our Rover friend. Jeepers, this - they're all too big.<br>LMP - Notice you're kicking up some white material there, Dave?<br>CDR - No, I didn't notice. Hey, you're right.<br>LMP - We ought to trench it.<br>CDR - You're right. Sure should.<br>- - -<br>LMP - Trench or a core?<br>- - -<br>CDR - Why don't we go to the upper rim up there and pick up the core, Joe - Jim, on the way back up?<br>LMP - Oay.<br>CDR - Let's get this - this fragment here - or a bunch of these little ones I guess. |

Bag 192  
cont.

CDR - So much dust - on the camera, it's hard to read the settings.

CDR - Okay. I think the big one is too big to put in, as usual. Of course, we'll never be satisfied with that, but I'll take some of these others.

LMP - Okay.

CDR - I think they're the same. Dust off a little bit. Another breccia.

LMP - Bag number is 192.

CDR - Hold it and I'll get a bunch of these frags right here.

---

LMP - Not much glass.

CDR - Okay. That ought to do it. Why don't you close it up, and I'll - put it ... here. Dying to look at that big rock.

LMP - Put this in your bag.

212

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|         |       |              |           |              |          |  |
|---------|-------|--------------|-----------|--------------|----------|--|
| Bag 193 |       | Breccia      | Station 6 | XSB 86-11638 | 06:00:23 | CDR - ... Dying to look at that big rock.    |
|         |       | knocked off  |           | XSB 85-11639 | to       | ---  |
|         |       | with hammer  |           | XSA 96-11640 | 06:00:24 | Let me borrow your hammer just a -           |
| 15265   | 314.1 | Breccia      |           | DSB 85-11523 |          | I'll take one whack and see if it will       |
| 15266   | 271.4 | Breccia      |           | DSB 85-11524 |          | come open.                                   |
| 15267   | 1.9   | Microbreccia |           |              |          | ---  |
|         |       |              |           | Area photos: |          | The visibility - Hold my tongs, please.      |
|         |       |              |           | 86-11633     |          | Let's see if we - it's got any variety       |
|         |       |              |           | 86-11634     |          | up here.                                     |
|         |       |              |           | Pan 9        |          | ---  |
|         |       |              |           | 85-11484,85  |          | LMP - - - friable to what you're trying      |
|         |       |              |           |              |          | to get.                                      |
|         |       |              |           | Pan 10       |          | CDR - Sure is. Not bad for a beginner. Okay. |
|         |       |              |           | 85-11511,12  |          | Give me the tongs, and let's just get        |
|         |       |              |           |              |          | another bag and pick up those two little     |
|         |       |              |           |              |          | frags there. What do you say?                |
|         |       |              |           |              |          | ---  |
|         |       |              |           |              |          | CDR - Okay. A microbreccia with millimeter   |
|         |       |              |           |              |          | white clasts, and there's a gray clast       |
|         |       |              |           |              |          | in there that's about 3 millimeters.         |
|         |       |              |           |              |          | It looks a little different. Let me          |
|         |       |              |           |              |          | go down and get this other one that          |
|         |       |              |           |              |          | came up.                                     |
|         |       |              |           |              |          | LMP - And 193 is the number on the bag.      |

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE                      | LOCATION & COMMENTS       | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|----------------------------------|---------------------------|---|----------------------------|---|
| EVA 2         |                  |                                  |                           |   |                            |   |
|               |                  |                                  | Trench site,<br>Station 6 | XSB 85-11641<br>XSB 86-11642<br>XSA 86-11643<br>XSA 86-11645<br>XSA 86-11646<br>DSA 86-11644<br>DSB - Loc<br>85-11525<br>DSB 85-11526 | 06:00:24<br>to<br>06:00:25 | CDR - Okay. Well, would you like a trench or a core, Joe? We'll give you your choice today.<br><br>CC - We'd like one of each, if we could, Dave.<br><br>CDR - A trench and a core?<br><br>CC - Yes, sir.<br><br>CDR - Okay. We'll go up and trench it first and see if it's worth coring.<br><br>CC - Okay.<br><br>CDR - Let's go up on the up - the upper rim up there, and work our way back up to our Rover friend.<br><br>CDR - Right up here where it's nice and fresh.<br><br>CDR - Hey, Jimmy - Dig me a little trench when you get up here.<br>- - - |
| Bag 166       |                  | Soil from<br>bottom of<br>trench | Trench site               | XSB 85-11641<br>XSB 86-11642<br>XSA 86-11643  | 06:00:27<br>to<br>06:00:30 | CDR - ... Okay, Jim's trenching. Hey, the other side, Jim, I can't see you.<br>- - -  |
| 15260         | 172.2            | Reserve<br>fines                 |                           | XSA 86-11645<br>XSA 86-11646<br>DSA 95-11644  |                            | LMP - I can trench it here.   |
| 15261         | 415.6            | <1 mm                            |                           | DSB - Loc   |                            | CDR - *** just right, right like you got it. Keep digging. Except you'll have to - That's right - Okay, I can see it. That's fine. Boy, when you put your scoop in, it smooths it out flat just like plaster.   |
| 15262         | 9.1              | 1-2 mm                           |                           | 85-11525  |                            |   |
| 15263         | 6.7              | 2-4 mm                           |                           | DSB 85-11526  |                            |   |
| 15264         | 5.9              | 4-10 mm                          |                           |   |                            |   |
|               |                  |                                  |                           | Pan 9<br>85-11483<br>to<br>85-11485   |                            | LMP - I was going to say like cement.<br><br>CDR - Yes. I can't - ... see any layering because the - the scoop just - -   |
|               |                  |                                  |                           | Pan 10<br>85-11511,12   |                            | LMP - Yes. It's all - very similar in color.<br><br>CDR - Can't tell whether - Nice and cohesive, it holds a straight wall very well. It's very fine powder, just like - graphite.  |

Bag 166  
cont.

- - -

Let me get this - Move to your left -  
and let me get over here. A little  
farther, Jim.

CC - Okay, troops. And we'll be asking for  
an SESC from the bottom of the trench  
when you get it built.

- - -

LMP - Got the pictures?

CDR - Yes. I think so. The rim, as all rims  
around are - very soft.

LMP - Did you hear him, Dave, he wants the SESC  
from the - the bottom of that.

CDR - Okay.

LMP - Let me get a bag; I'll sample the bottom.

CDR - Okay. I'll get your bag.

LMP - First scoop?

CDR - Yes.

LMP - Just one.

CDR - Okay; that's good.

LMP - Okay; I'll get the SESC now - -

- - -

CC - Dave, ... Copy, you've gotten the  
SESC out of the bottom of the trench now.

CDR - No - ... We haven't, Joe, you missed  
it. 166 the bag. We didn't get the SESC - -

---

| SESC #1 | SESC           | Station 6                          | Same as                   | 06:00:30       | CDR - - - we just got a sample from the bottom   |
|---------|----------------|------------------------------------|---------------------------|----------------|--|
| 15012   | 312.2<br>(net) | Trench Site<br>Bottom of<br>trench | trench site,<br>Station 6 | to<br>06:00:33 | of the trench. And since we - since we<br>have to walk back uphill to the Rover to<br>get the SESC - - |

Pan 9  
85-11482,83

Pan 10  
85-11513

LMP - No, it's on your back.

CDR - Oh, just do it.

- - -

Why don't you scoop out the bottom on  
this side a little bit, Jim.

LMP - \*\*\* out the bottom, you say?

CDR - Yes, dig it a little deep - deeper, I  
think you can probably - get the  
thing deeper and -

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER                | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN                            | CREW COMMENTS RELATING TO SAMPLES  |
|------------------------------|------------------|-------------|---------------------|---|---|--|
| -----                        |                  |             |                     |   |   |  |
| EVA 2                        |                  |             |                     |   |   |  |
| -----                        |                  |             |                     |   |   |  |
| SESC # 1<br>15012<br>cont.   |                  |             |                     |   |   | <p>LMP - You want me to hit bedrock, I know.</p> <p>CDR - Yes. Okay; I can't see in the bottom of it, but go ahead. Dig her. Have a - have a scoop load. I think the wall collapsed on you.</p> <p>- - -</p> <p>Get your scoop up. That - that's it. That's it. That's good, Jim. That's about half - can you get another one? Hey, don't slide down in there, that - that's really slippery.</p> <p>LMP - Yes. I noticed.</p> <p>- - -</p> <p>LMP - Let's see, we probably ought to put that SESC in your bag.</p> <p>CDR - Yes.</p> <p>CC - And, Jim, did you get an after picture of that?</p> <p>CDR - I'll get it. I'll - I'll get it, Joe.</p> |
| -----                        |                  |             |                     |   |   |  |
| Single Core<br>#-07<br>15009 | 622.0<br>(net)   | Core        | Station 6           | <p>XSB 86-11647</p> <p>XSB 85-11648</p> <p>XS during</p> <p>86-11649</p> <p>85-11650</p> <p>XSA 86-11651</p> <p>DSB - Loc</p> <p>85-11527</p> <p>85-11528</p> <p>85-11529</p> <p>Pan 9</p> <p>85-11482,83</p> <p>Pan 10</p> <p>85-11513</p> | <p>06:00:34</p> <p>to</p> <p>06:00:39</p> | <p>CC - And, Dave, while you're taking that picture, we'll be asking for a core tube after that. We want you to use an upper core, because we only have one lower in the bag right now.</p> <p>CDR - Very well, Joe, we'll get you a core right here.</p> <p>- - -</p> <p>One - core; upper core.</p> <p>LMP - You know, it's unfortunate, Dave, that we didn't take that down at the lower rim where the white was exposed. Here I don't see the white.</p> <p>CDR - Yes, I didn't either. Maybe we ought to go back down there and do that.</p> <p>- - -</p>   |

Single  
Core

15009  
cont.

CC - Jim, we've got that double left. Do you  
suppose you could drive a single core  
down where it's white?

LMP - Yes, sure, I'm sure we could.

CDR - Yes, we could. Let's go do that. Yes,  
let's go take advantage of what we know  
down there on the albedo.

CDR - Go ahead. Go ahead.

LMP - Yes. I'm right behind you.

CDR - By the fresh spot down there.

CDR - Okay; you sure see the change. \*\*\* up on  
the high place here.

LMP - Above the bench. Let's try it right  
there.

CDR - Yes, boy, the soil is more granular here,  
too. Quite a difference from one side of  
the rim to the other.

- - -

CDR - Oh! Easy. Neat, ... Hey, all the - all  
the way in very easily with a push, Joe.

- - -

LMP - Okay; I have it.

CDR - Just don't step backward any farther.  
Wait, let me get the picture - I'll  
just walk over there, Jim. Okay.

- - -

Good core, Joe.

LMP - I like those cores like that.

CDR - Never know. Put that in my bag. Don't  
step backwards.

LMP - Hear you talking.

- - -

CC - Jim, we've got that double left. Do  
you suppose you could drive a single  
core down where it's white?

LMP - Yes, sure, I'm sure we could.

CDR - Yes, we could. Let's go do that.  
Yes, let's go take advantage of what  
we know down there on the albedo.

- - -

By the fresh spot down there.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE   | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS                            | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|---------------|---------------------|--|----------------------------|---|
| EVA 2         |                  |               |                     |  |                            |   |
| Single Core   |                  |               |                     |  |                            | CDR - Okay; you sure see the change. *** up on the high place here.   |
| 15009 cont.   |                  |               |                     |  |                            | LMP - Above the bench. Let's try it right there.<br>CDR - Yes, boy, the soil is more granular here, too. Quite a difference from one side of the rim to the other.<br>CDR - Okay. I don't think you'll need your hammer, but I'll get it anyway.<br>LMP - Yes, and I'll get up on the uphill side here.<br>Okay; it's in position.<br>CDR - Okay; I got the picture. 07's the number, Joe.  |
| Bag 167       |                  | Soil          | Typical soil by LRV | XSB 86-11656<br>XSA 86-11657<br>Pan 9<br>95-11487,88 | 06:00:40<br>to<br>06:00:44 | CC - A little something for the soil mechanics, sounds great. And we'd like for you to put several scoops of the soil in bag number 6 on the handtool carrier when you get back to the Rover.<br>CDR - Yes, but that's - Hey. Why don't we put them in a sample bag, Joe? Why - -<br>I'll get you a sample bag.<br>LMP - ... the sample, I guess, the typical soil by the Rover.<br>CC - And, Dave and Jim, we're after a large volume here, so shovel it in.<br>CDR - All right. Bag number 167. Beginning to shovel large volume.<br>LMP - About all we can put in there.<br>CDR - Yes, that's a large volume.<br>CDR - Okay; and 167 goes in your bag. |
| 15270         | 319.0            | Reserve fines |                     |  |                            |   |
| 15271         | 798.3            | <1 mm         |                     |  |                            |   |
| 15272         | 20.7             | 1-2 mm        |                     |  |                            |   |
| 15273         | 13.7             | 2-4 mm        |                     |  |                            |   |
| 15274         | 4.4              | 4-10 mm       |                     |  |                            |   |

Bag 167  
cont.

Station 6a  
Large  
boulder

06:01:04  
to  
06:01:12

CDR - Okay; let's attack that boulder. You got your hammer?  
- - -

LMP - I'll walk down, Dave. Want me to carry some of those tools?  
- - -

CDR - Hold on, Jim. Wait a minute, ... don't go yet. Let me drive the Rover down there.  
- - -

CC - And, Dave, are you driving now?

CDR - No, Joe. I'll give you a call, Joe. Stand by.

LMP - Meantime, I'll be taking a pan from here, Dave.  
- - - Looks like it's going to be our high point.  
- - -

CDR - Okay, Jim, you can come on down now.

LMP - Yes. I estimated a what - 20-degree slope?

CDR - I don't know.  
- - -  
Closer to 15, probably.

LMP - Don't - Here. ... The Rover looks like - Although, see the back wheel's off the ground.  
- - -

Pan 11  
90-12187,88

218

Bag 169

Breccia,  
light green  
Reserve  
fines  
<1 mm  
1-2 mm  
2-4 mm  
4-10 mm  
Breccia

Station 6A  
3m rock

XSB 36-11658  
XSB 86-11659  
XSA 36-11660  
XSA 36-11661  
DS 90-12199  
DS 90-12200

Pan 11  
90-12187,88

06:01:13  
to  
06:01:19

LMP - Are you really - let me hold that Rover and you come up and look at this, because this rock has got green in it, a light green - -  
- - -  
The first green rock I've seen - light green.  
- - -

CDR - It's a big breccia - that's all it is. I - I don't see anything, Jim.

LMP - About halfway up, maybe you have to look down-Sun to see it. It looks like a light green layer, not necessarily a thick layer. Light green.

CDR - You mean on the surface?

LMP - Yes, on the surface.

15400 47.5  
15401 85.4  
15402 4.3  
15403 6.1  
15404 7.9  
15405 513.1

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER    | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS | SET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES  |
|------------------|------------------|-------------|---------------------|---------------------------|----------------|--|
| -----            |                  |             |                     |                           |                |  |
| EVA 2            |                  |             |                     |                           |                |  |
| -----            |                  |             |                     |                           |                |  |
| Bag 168<br>cont. |                  |             |                     |                           |                | <p>CDR - Hey, you're right.</p> <p>-----</p> <p>It seems to be a - surface material or else it's a very frangible clast in this big piece of breccia. Dig my tongs into it.</p> <p>LMP - Sure it's green and not just white albedo again?</p> <p>CDR - No, it's green.</p> <p>LMP - It looks green. And I - I noticed just downslope from the rock, you kicked up the surface and there's some more green there.</p> <p>-----</p> <p>This rock is - about 3 meters long. - - - Subangular - very rough-textured surface. And the surface that's facing northwest - is the dark, typical breccia. And it looks like - what appeared to me - like there's a layer - there that might be a foot and a half, 2 feet thick, appears the - a light greenish color. Dave's sampling right now.</p> <p>-----</p> <p>And on the side to the southeast is again the breccia. Isn't that right, Dave?</p> <p>CDR - Yes. And I got a little frag. Don't drop it. There. And I got some green, and I got a frag out of the breccia. It's fairly loose - breccia, as breccias go. Oh, and there's a great big white clast on the inside, but - man, like an inch or so.</p> <p>168, Joe. Got a little bit of green, and I got a chunk about 3 inches of the rock itself.</p> |
| -----            |                  |             |                     |                           |                |  |

Leave Station 6A

Station 6A -  
7 Traverse

06:01:23  
to  
06:01:27

CDR - Okay. Okay, Joe. We're moving now.  
- - -  
... Okay. Let's see, do we want to hit the upper rim or the lower rim of Spur?

LMP - You see that large block on the - - the northern rim.

CDR - Yes, I think we should work down to the northern rim, right?

LMP - Yes, if we're going to sample any blocks there on the rim, that'd be the place to do it.  
- - -

CDR - Okay. We're in good shape, Joe. That one wall there has quite a bit of debris, doesn't it?

LMP - Yes, and it looks like it's - again has a linear pattern running north and south.

CDR - Almost does.

LMP - We're talking about the debris that's exposed on the north wall of Spur. And the slope here is - oh, 8 to 10 degrees.  
- - -

CDR - We're at Spur crater, Joe.

Arrive at Spur Crater

Station 7  
Spur crater

06:01:30  
to  
06:01:33

LMP - We picked up some more green material here, Dave.

CDR - Sure it isn't that light gray albedo stuff?

LMP - No, it looks green.  
- - -

... I see white; I see a light green; and I see a brown.  
- - -

CDR - Okay, Jimmy. Let's go to work.

LMP - Roger. You don't think there's green here, huh?

CDR - No, Jim, I don't know. I think it's a gray. ... gray in the albedo. At least, that would be my guess.

LMP - Oh, it might be the EV visor that makes it look green. But, it's worth sampling. Notice that large rock on the northwest side, just on the inner edge there. - - - Clearly a breccia. Look at the clasts; you can see the clasts from here.

CDR - You sure can.

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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE        | LOCATION & COMMENTS                   | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|--------------------|---------------------------------------|---|----------------------------|--|
| EVA 2         |                  |                    |                                       |   |                            |  |
|               |                  |                    |                                       |   |                            | LMP - And, it looks like it's a different color rock. Well, it's a dark -  |
|               |                  |                    |                                       |   |                            | CDR - Okay, let's go sample the rim over here.   |
| Big 194       |                  |                    | Station 7<br>Spur crater<br>North Rim | XSB 86-11662<br>XSB 85-11663<br>XSA 85-11664<br>XSA 86-11665<br>DS 90-12223<br>Loc 90-12224 | 06:01:34<br>to<br>06:01:37 | CDR - Okay, Jim. There's a good pile of rocks right here.  |
| 15410         | 56.2             | Reserve fines      |                                       |   |                            | LMP - Hey, look at that light colored rock with - - it almost looks like a white vein on top of the other rock.  |
| 15411         | 103.3            | <1 mm              |                                       |   |                            | CDR - Yes, look at that. How about that, we'll get that one.   |
| 15412         | 7.1              | 1-2 mm             |                                       |   |                            | - - -  |
| 15413         | 6.7              | 2-4 mm             |                                       |   |                            | Yes. It's a breccia. It's a dark gray rock that looks like a - actually it looks like a big pinnacle with a small gray and white breccia on top of it. The pinnacle is about 6 inches across and 4 or 5 inches high. On top of it is about a 2- to 3-inch subangular frag with a light gray - or medium gray matrix, and about 20 percent white clast in it. Really unique. It stands out - it's amazing. Okay, Jimmy. Let's gather some data. |
| 15414         | 4.0              | 4-10 mm            |                                       | Pan 12<br>90-12201,02   |                            | LMP - You've got a sample there, right?  |
| 15417         | 1.3              | Breccia            |                                       |   |                            | CDR - Yes.   |
| 15418         | 1140.7           | Breccia            |                                       |   |                            | - - -<br>Okay. Oh, there are sparklies and all kinds of breccia. ... soil. It's sort of caked on the top. Yes. Another black matrix, fine-grained with white clasts - millimeter size - and there are some very fine grained little sparkles in there, though.   |
| 15419         | 17.7             | Breccia with glass |                                       |   |                            | LMP - Okay. I even see some vesicles in it.  |
|               |                  |                    |                                       |   |                            | CC - Just standing by for the number, Dave.  |

Bag 194  
cont.

CDR - 194.

CDR - Yes. Let me get the other one that is sitting right next to it. Look how the upper layer of the soil here is caked.  
- - No, better yet, why don't you gather some soil? - - Yes. Let's get soil in this bag.

LMP - Okay.

CDR - Right there by the rock.

LMP - Yes.

CDR - Leave the rock whole.

LMP - Yes.

CDR - Is that a glass one, sitting right below it?

LMP - It sure looks like it. It was under it, wasn't it?

CDR - Yes. Yes. Let me take a picture. Just a minute, let me take a picture, and why don't you pick up that little piece of glass and put it in the bag, too.

CDR - That must have been under the rock.

LMP - Yes.

CDR - Okay, I got the picture.

LMP - Yes.

CDR - Pick up that little rock.

LMP - Okay. (TV shows CDR closing sample 194, into LMP SCB)

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE          | LOCATION & COMMENTS                   | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|----------------------|---------------------------------------|---|----------------------------|---|
| EVA 2         |                  |                      |                                       |   |                            |   |
| Bag 195       |                  | Soil and rocks       | Station 7<br>Spur crater<br>North Rim | XSB 86-11666<br>XSB 86-11667<br>XSA 86-11668<br>XSA 85-11669<br>DS 90-12225<br>DS - Loc<br>90-12226 | 06:01:37<br>to<br>06:01:41 | CDR - ... I think the next order of business is that neat one there.  |
| 15421         | 254.7            | <1 mm fines          |                                       |   |                            | LMP - Okay, well, there are two - just to the west of you, Dave, is some of that - what we've been calling green material - clearly visible? See what I mean?   |
| 15422         | 15.9             | 1-2 mm               |                                       |   |                            | - - -   |
| 15423         | 18.3             | 2-4 mm               |                                       |   |                            | CDR - Okay. I'd call it light gray but, we'll check it when we get home.  |
| 15424         | 19.5             | 4-10 mm              |                                       |   |                            | LMP - Well, it's definitely different from the next rock, or the one we just picked up.   |
| 15425         | 136.3            | Green and gray clods |                                       | Pan 12<br>90-12201,02<br>90-12222   |                            | CDR - Okay. Sure is. That's awful big, but I think we ought to sample here anyway, all those little frags. I've got to admit it really looks green to me, too, Jim, but I can't believe it's green.   |
| 15426         | 223.6            | Green and gray clods |                                       |   |                            | CDR - Oh, my, it is green.  |
| 15427         | 115.9            | Green and gray clods |                                       |   |                            | Man, that looks almost - now it's gray. The visor makes it green, Jim.  |
|               |                  |                      |                                       |   |                            | LMP - It's green.   |
|               |                  |                      |                                       |   |                            | CDR - A different shade of gray.  |
|               |                  |                      |                                       |   |                            | LMP - Yes, I know. I put my visor up, too.  |
|               |                  |                      |                                       |   |                            | CDR - But it's a very light grain, very fine grain, sure looks like a basalt with some very - less than millimeter-size vesicles in it, maybe 5 percent or so. It's a subangular rock. It's friable - I can - maybe it's not a basalt. It's friable - I can scrape it off with my glove and I put some streaks in it, in case anybody wonders what that is when we get back. But, it's definitely different from anything we've seen before. 195 - let me get another one here. |

Bag 195  
cont.

With the visor on, Joe, I was about ready to call it a dunite, but I opened up my visor, and I was wrong. I didn't get to call it what I wanted to. Here's another one of the same stuff, Jim.

- LMP - Okay, why don't - why don't you get a sample - let me take a picture, and you get a sample of the soil, okay. Why don't you just scoop in between them.
- CDR - Yes. I think this is a big frag here, but, it broke - - when it hit. All these pieces are roughly the same.
- LMP - Yes. Not much soil here, really.
- CDR - No, it really isn't.
- CC - Dave and Jim, is it your impression that you are sampling on the ejecta blanket of Spur crater, now?
- CDR - Yes, sir; probably from the deepest part, because we're right on the rim.
- LMP - Okay, 195.

224

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|         |       |             |             |              |          |
|---------|-------|-------------|-------------|--------------|----------|
| Bag 196 |       |             | Station 7   | XSB 86-11670 | 06:01:41 |
| 15415   | 269.4 | Anorthosite | Spur crater | XSB 86-11671 | to       |
|         |       |             | North rim   | XSA 86-11672 | 06:01:44 |
|         |       |             | Very near   | DSB 90-12227 |          |
|         |       |             | sample 195  | DS - Loc     |          |
|         |       |             | "Genesis"   | 90-12228     |          |
|         |       |             |             |              |          |
|         |       |             |             | Pan 12       |          |
|         |       |             |             | 90-12201,02  |          |
|         |       |             |             | 90-12222     |          |

- CDR - Okay. Now let's go down and get that unusual one. - get that unusual - one. There's a dense - and there's another unusual one; look at the little crater here, and the one that's facing us. There is a little white corner to the thing.
- - -
- - Okay, there's a big boulder over there down-Sun of us, that I'm sure you can see - there is a boulder down in front of us I'm sure you can see, Joe, which is gray. And it has some very outstanding gray clasts and white clasts, and oh, boy - it's a beaut! We're going to get ahold of that one in a minute.
- LMP - Okay, I have my pictures, Dave.
- CDR - Okay, let's see. What do you think the best way to sample it would be?
- LMP - I think probably - could we break off a piece of the clod underneath it? Or - or I guess you could probably lift that top fragment right off.
- CDR - Yes. Let's - let me try. Yes. Sure can. And it's a - a white clast, and it's about - oh, boy!

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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE                       | LOCATION & COMMENTS   | LUNAR-SURFACE PHOTOGRAPHS   | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|-----------------------------------|-----------------------|---|----------------------------|--|
| EVA 2         |                  |                                   |                       |   |                            |  |
| Bag 196       |                  |                                   |                       |   |                            |  |
| 15415         |                  |                                   |                       |   |                            | LMP - Look at the - glint. Almost see twinning in there.   |
| cont.         |                  |                                   |                       |   |                            | CDR - Guess what we just found. Guess what we just found.  |
|               |                  |                                   |                       |   |                            | LMP - I think we found what we came for.   |
|               |                  |                                   |                       |   |                            | CDR - Crystalline rock, huh? Yes, sir. You better believe it.  |
|               |                  |                                   |                       |   |                            | LMP - Look at the plag in there.   |
|               |                  |                                   |                       |   |                            | CDR - Almost all plag. ... As a matter of fact - Oh, boy, I think we might - ourselves something close to anorthosite, because its crystalline, and there's just a bunch - it's just almost all plag. What a beaut.  |
|               |                  |                                   |                       |   |                            | LMP - That is really a beauty. And, I - there is - there's another one down there.   |
|               |                  |                                   |                       |   |                            | CDR - Yes. We'll get some of these.  |
|               |                  |                                   |                       |   |                            | LMP - Ah, ah. Beautiful. Hey, let me get some of that clod there. No, let's don't mix them - let's make this a special one. I'll zip it up.  |
|               |                  |                                   |                       |   |                            | LMP - Make this bag 196, a special bag. Our first one.   |
| Bag 170       |                  | Clods from "pedestal" under 15415 | Station 7 Spur crater | XSB 86-11670<br>XSB 86-11671<br>XSB 85-11672<br>XSB 86-11673<br>XSA 95-11674<br>DSB 90-12227<br>DS - Loc 90-12228 | 06:01:44<br>to<br>06:01:46 | CDR - ... Oh, boy. Okay, let's get some of the other - maybe - let me take a picture first in here. I got it. No sweat. Now, we got to think of how to get that other piece there. Maybe if you could put your scoop in it, and break off a chip - do you think? |
| 15431         | 475.7            | <1 mm fines                       |                       |   |                            | LMP - I think I can just - I think it's just a clod. Don't you?  |
| 15432         | 39.7             | 1-2 mm                            |                       |   |                            | CDR - I don't know. Try it. Put your scoop there in the middle and break off a chip.   |
| 15433         | 31.2             | 2-4 mm                            |                       |   |                            | LMP - Yes.   |
| 15434         | 51.6             | 4-10 mm                           |                       |   |                            |  |
| 15435, 1-32   | 206.8            | Total of 32 splits                |                       | Pin 12<br>90-12201,02<br>90-12222   |                            |  |

Bag 170  
cont.

226

CDR - It's not a clod, is it?  
CDR - Yes. It is a clod.  
LMP - Want to take this piece here?  
CDR - Yes. Let me get you a bag. Wait. Let me take a picture first, so you know which one we got. Okay. Go ahead. Number 170.  
- - -  
CDR - Boy, that's a beautiful rock - -  
CC - - - Are you working on the outside of the crater or are you - - over the lip right now  
CDR - Oh, just a tad over the lip on a little bench, but it's -  
LMP - Dave, could you hold that one?  
CDR - Yes.  
LMP - I don't know whether it'll fit in the bag or not. Got it?  
CDR - No. It dropped. See if you can pick it up again. I think it'll fit in the bag, Joe - Jim.  
LMP - A little frangible.  
CDR - Yes. It really is. I think I can get it with the tongs. Here.  
- - -  
There's a contact sort of - on there. We ought to try and get the contact if we can. Okay, babe. Open the bag.  
LMP - Okay, I got.  
CDR - That a boy. Good show. Post-pick-up picture. Okay; roll that beauty up. Let's go get some more of that.

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|            |       |               |            |              |          |  |
|------------|-------|---------------|------------|--------------|----------|--|
| Bag 198    |       |               | Station 7  | XSB 86-11675 | 06:01:48 | CDR - Okay, I have - oh - look at this, Jim. |
|            |       |               | (1 rock)   | XSB 86-11676 | to       |  |
| 15455      | 985.4 | black and     | black and  | XSA 96-11677 | 06:01:50 | LMP - Ha, what a contact!                    |
|            |       | white breccia | white rock | DS - Loc     |          | CDR - Look, what a contact!                  |
| 15455,1-22 | 51.8  |               |            | 90-12229     |          | LMP - Yes, man!                              |
|            |       |               |            | Pin 12       |          |  |
|            |       |               |            | 90-12201,02  |          |  |

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|------------------------------------|----------------------------|--|--------------------------|---|----------------------------|--|
| EVA 2                              |                            |  |                          |   |                            |  |
| Bag 198<br>15455<br>cont.          |                            |  |                          | Pan 12 cont.<br>90-12222                                |                            | CDR - I've got - man, oh man. I got about a 4 incher, Joe. It's subrounded, and on one half of it, we have a very dark, black, fine-grained basalt with some - it looks like some very thin laths in it of plagioclase - nothing else. And, in one region, there is some millimeter-type vesicles along a linear pattern very close to the contact. And, the other side of the contact, we have a pure, solid-white, fine-grained frag, which looks not unlike the white clasts in the 14 rock. But it's a beautiful contact in here. And, we'll call this one bag number - -<br><br>LMP - 198.<br>- - -<br>CDR - ... Okay. You want to put that bag in my pocket?<br><br>LMP - Yes, I will as soon as I zip it. |
| Bag 199<br>15465,0                 | 374.8                      | glass coated<br>breccia                              | Station 7<br>Spur crater | XSB 85-11678<br>XSB 86-11679<br>XS (during)<br>85-11680 | 06:01:49<br>to<br>06:01:52 | CDR - Okay. We'll ease over to that big rock. Looking on the way for anything else unusual. It's another clod that evidently hit. Let's sample it just to get the - distribution around the circumference of the rim here.<br>- - -<br>LMP - I was going to - I was wondering why you wanted to use the scoop.   |
| 15465,1<br>15466<br>15467<br>15468 | 1.2<br>119.2<br>1.1<br>1.3 | glass, breccia<br>glass<br>breccia<br>glass, breccia |                          | XSA 86-11681<br>DS - Loc<br>90-12230                    |                            | CDR - Don't think we can get a scoop on this one. I think it's going to - Oh, look at this one.<br>- - -<br>Don't move out of that - your shadow. No. I got a big - is that glass, or is that basalt? Look at that frag there. Let me take a picture from where - it came from under that rock.<br><br>LMP - Think so?<br><br>CDR - Yes. It looks like a big piece of glass. It's got some bubbles in it. Oh, look at that. Isn't that pretty?   |
|                                    |                            |  |                          | Pan 12<br>90-12201,02<br>90-12222                       |                            |  |

Bag 199  
cont.

LMP - That's a glass-coated breccia.  
- - -  
CDR - It's shiny. 199.  
- - -  
Let me get some more of this, Jim.  
- - -  
There's another piece of the frag that  
it went with.

Bag 171

15445 287.2 breccia

Station 7  
Spur crater  
Near large  
block of XSB 86-11690  
breccia in- XSB 86-11691  
side the XSA 86-11692  
NW rim of XSA 86-11693  
Spur crater XSA 86-11694

06:01:55  
to  
06:01:59

CDR - I'll get the gnomon. And while you're  
putting the rake on I'll photograph this  
thing, (large block) anyway.

LMP - Okay.

CDR - I think it looks very much like the 14 rocks.  
- - -  
Though, it looks maybe a little darker gray.  
- - -  
There's a convenient piece broken off,  
right here.  
- - -

Pan 12  
90-12201,02  
90-12222

86-11682  
through  
86-11689  
show large block

CDR - All right, Joe. And, mark bag 171 for a  
frag off of that big boulder. I'm pretty  
sure it was exposed right on the surface,  
fairly clean - right next to the boulder  
and looked like the same material.

Bag 172

15310 140.6  
15311 295.0  
15312 10.1  
15313 9.8  
15314 8.4  
15315-15360 387.5  
15361 0.9

Rake sample  
fragments  
from  
Comprehensive  
sample

Station 7  
Spur crater

DSB 90-12231  
DS - Loc  
90-12232  
XSA 90-12233  
XSA 90-12234

06:01:59  
to  
06:02:04

LMP - And, Joe, this looks like a pretty good  
place to rake. I've raked one swath here  
about 2 feet long and I've collected -  
oh, about 15 rocks.  
- - -

CDR - Oh, yes. You did get a bunch. 172.  
- - -

LMP - Okay. Got a little more swath.

CDR - Yes. It's about 1 meter long and one rake-  
width wide.  
- - -

CDR - Glass on some. Most of them are rounded;  
right size.  
Okay, do another one.  
- - -

15362-15364 6.2  
15365-15377 17.9  
15378-15384 79.1  
15385-15388 27.2  
15389-15392 7.0

Baserve  
fines  
<1 mm  
1-2 mm  
2-4 mm  
4-10 mm  
Breccia  
Pale green  
rock  
Anorthosite  
Glass breccia  
Basalt  
(non-mare)  
Basalt (mare)  
Glass

... Oh, good! That's three swaths 1 meter  
long apiece.  
Damn bag isn't full yet. Let's shoot for  
a full bag. What do you say? Take it  
just a second to go one more sweep there.  
- - -

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|---------------|------------------|--------------------------------|--------------------------|--|----------------------------|--|
| EVA 2         |                  |                                |                          |  |                            |  |
| Bag 172       |                  |                                |                          |  |                            | Good, good, good. Shake anymore in the -   |
| 15310-        |                  |                                |                          |  |                            | Yes. That's too bad; we didn't get many  |
| 15392         |                  |                                |                          |  |                            | out of that one. Why don't you take one  |
| cont.         |                  |                                |                          |  |                            | over - Let me move the gnomon about 3  |
|               |                  |                                |                          |  |                            | inches here, and take one on this side,  |
|               |                  |                                |                          |  |                            | Jim. Okay? Move the gnomon back about a  |
|               |                  |                                |                          |  |                            | foot. Why don't you take a swath here and  |
|               |                  |                                |                          |  |                            | I'll - -   |
|               |                  |                                |                          |  |                            | LMP - Yes, you know, because we're moving farther  |
|               |                  |                                |                          |  |                            | - a little farther from the rim - -  |
|               |                  |                                |                          |  |                            | - - -  |
|               |                  |                                |                          |  |                            | You get less and less each swath.  |
|               |                  |                                |                          |  |                            | - - -  |
|               |                  |                                |                          |  |                            | CDR - We got a whole bagful of those in the comp.  |
|               |                  |                                |                          |  |                            | And that's in 172.   |
| -----         |                  |                                |                          |  |                            |  |
| 229           | Bag 173          | Soil from comprehensive sample | Station 7 Sput crater    | DSB 90-12231<br>DS - Loc<br>90-12232<br>XSA 90-12233<br>XSA 90-12234 | 06:02:04<br>to<br>06:02:07 | CC - ... I guess all we need is a soil sample from this area and perhaps even larger rocks, if there's some grapefruit to football-size rocks there.                                     |
|               | 15300            | 390.7                          | 1 fragment Reserve fines |  |                            | CDR - Yes. Yes, we'll just finish off Jim's collection bag here. I want to stow it anyway. Oh, look at that glass spherule - spherule down there. See that big one. I got to - Listen -- |
|               | 15301            | 810.2                          | <1 mm                    | Pan 12   |                            | LMP - Oh, yes. I see it.   |
|               | 15302            | 23.2                           | 1-2 mm                   | 90-12216, 17   |                            | CDR - Why don't you back off and document the area. Let me get my tongs and pick that up.  |
|               | 15303            | 12.7                           | 2-4 mm                   |  |                            | - - -  |
|               | 15304            | 7.3                            | 4-10 mm                  |  |                            | Perfectly round, about - -   |
|               | 15305            | 2.9                            | green soil concentrate   |  |                            | - - -  |
|               | 15306            | 134.2                          | breccia                  |  |                            | LMP - Keep an eye on the spherule.   |
|               | 15307            | 1.3                            | glass sphere             |  |                            | CDR - My toes are right on it. I got the tongs. My little paw. So I'll get you a bag; let you take a picture of that. I'll get a bag; then you can get the soil.                         |
|               | 15308            | 1.7                            | breccia                  |  |                            |  |

Bag 173  
cont.

LMP - Where you going to put that little spherule?

CDR - In the bag.

LMP - Not with the soil, though, are you?

CDR - Yes.

- - -  
Came out of the soil. I just didn't want to miss it. We'll remember that. That goes in bag number 173, and, well, our friends in the back room are writing that down right now.

- - -  
Little fat ball.  
Yes. Let's fill the bag.

LMP - Is that a full bag there?

CDR - Yes, sir. That's a full bag. That's a full bag.

- - -  
Yes. Here, let me put this in your backpack. Stand there; that's good. I'll get it.

230

SCB 6  
FSR "g"

15459 5854.0 breccia

XSB 90-12235 05:02:07

XSB 90-12236 to

06:02:09

Pan 12  
90-12217, 18

CDR - Why don't you come over here and get your scoop and scoop me up one big rock?

- - -  
CDR - Now - and get your camera on it, because I don't have it - any film. How about this one right here that looks like it has some layering in it? Maybe.

LMP - Yes, that's the one I was talking about.

CDR - Too big. Get another one.

CDR - Get that one on the - on your side.

LMP - Yes. Man! I got it.

CDR - Good. Okay; fill that square. Okay, Jim. Let's get on the Rover and head back.

Leave Spur Crater

Arrive at Dune Crater

Station 4  
Dune crater

Pan  
90-12237  
through  
90-12248

06:02:28

to

06:02:29

CDR - This is a good spot right here.

LMP - Oh, look at those large blocks on that west wall.

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|---------------|------------------|-------------|-----------------------------------|--|----------------------------|---|
| EVA 2         |                  |             |                                   |  |                            |   |
|               |                  |             | Station 4<br>Dune crater<br>cont. |  |                            | CDR - Yes, wan! Look at the large one right here. Gee, let me get this off.<br>- - -<br>LMP - Okay; we've stopped, Joe.   |
| -----         |                  |             |                                   |  |                            |   |
| Bag 203       |                  |             | Station 4<br>Dune crater          | XSB 87-11759<br>XSB 87-11760<br>DSB 87-11761<br>LOC 87-11763<br>XSA 87-11762<br>XSA 87-11764 | 06:02:30<br>to<br>06:02:36 | LMP - For a 10-minute stop, Dave, I don't think the rake is - - very good.<br>- - -<br>There are a lot of large fragments here, Joe.<br>- - -<br>CDR - I think we can get a pretty good distribution.<br>- - -<br>These two right here, Jim.<br>LMP - Okay, you've got to take the pictures.<br>CDR - Yes, I'll take all the pictures, if you'll get the -<br>Got a bag out?<br>LMP - Yes.<br>CDR - Yes, we need another one.<br>LMP - I got her.<br>CDR - Get a bag and you get some soil here. Watch that big one. I want to get that one, too.<br>Okay; good. Why don't you zip the bag.<br>- - -<br>LMP - In your bag.<br>CDR - I didn't notice. Oh, yes. Must be - what number was that, you remember?<br>LMP - No, I don't.<br>- - -<br>CDR - Read the number on my bag.<br>- - -<br>There's 204 in there now. It must have been 203. |

Bag 174  
 15495 908.9 Gabbro Station 4 Dune crater XSB 87-11759 06:02:30 CDR - Get a bag and you get some soil here (203).  
 XSB 87-11760 to Watch that big one. I want to get that  
 XSB 87-11762 06:02:36 one, too.  
 DSB 87-11761 Okay; good. Why don't you zip the bag.  
 DSB - Loc And let me get that other big rock, that -  
 87-11763 - - -  
 XSA 87-11764 Okay, hold this bag, and it's number 174.

SCB 5  
 PSR "P" vesicular basalt Station 4 DSB 87-11767 06:02:37 LMP - The large gray one to your right with  
 Piece broken DSB - Loc to large vesicles in it.  
 from the 87-11768 06:02:40 CDR - Yes, that big boulder. Yes, man.  
 corner of XSA 87-11779 - - -  
 a basalt Huge vesicles. Oh, look at the plagioclase in there. Man, look at the laths, Jim; it's beautiful. Whooo! Vesicles  
 boulder in this must be about 2 to 3 inches - -  
 in size. And it's a big boulder.

Pan 13  
 90-12242,43

CDR - Yes, sir.

LMP - Boy, that's a real beauty.

CDR - Really is, isn't it?

LMP - Want to try and knock a piece off, here?

CDR - Yes.

LMP - Should come off pretty easy.

CDR - Sure looks like it. Get all these.

CDR - Okay, if you'll hold my tongs, here.  
 Okay. Should be able to get it right  
 here in the middle.

- - -  
 That one right there.

- - -  
 LMP - Now put that large one in my pack.  
 (This may refer to 15498)

CDR - Put that in my pack; will you, Jim?  
 Okay; this is a large corner of a  
 vesicular rock that's the big boulder  
 sitting here.

LMP - Just about all we're going to be able  
 to put in your bag.

- - -  
 CDR - ... the big chip off the top that's  
 got the vesicles in it is in my pack,  
 solo. (15499)

SCB 6  
 PSR "F-Prime" Breccia Apparently collected without comment XSB 87-11765  
 15498 2339.8 XSA 97-11769  
 Pan 13  
 90-12242,43

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|---------------|------------------|-------------|---|--|----------------------------|---|
| EVA 2         |                  |             |   |  |                            |   |
| Bag 204       |                  |             | 2 frags chipped from E side of large boulder at Dune Crater | XSB 87-11765<br>XSB 87-11766<br>DS 87-11767<br>DS - Loc 37-11768<br>XSA 97-11769<br>XSA 37-11770 | 06:02:40<br>to<br>06:02:41 | CDR - Okay. Hey, maybe - let me get those two frags there from the center. Give me - - those tongs.<br>- - -<br>CDR - 204 for the two frags in the center of the boulder.<br>- - -<br>And that's not much for Dune, but I think it's representative.<br>- - -<br>I hope it's representative because it - Okay. Put that in my bag, Jim? |
| 15485         | 104.9            | Basalt chip |   |  |                            |   |
| 15496         | 46.8             | Basalt chip |   |  |                            |   |
|               |                  |             | Station 4 Dune crater                                       | Additional photos of big boulder 97-11171 through 87-11178                                       | 06:02:37<br>to<br>06:02:41 |   |

Travel,  
Station 4  
to LM  
Description  
of rocks  
at Station 4

06:02:49  
to  
06:02:50

CDR - ... Okay, by the way, Joe, I guess we ought to tell you about what we saw at that last stop. We gathered a few quick samples that were covered with dust, which we didn't look at very carefully, just so we could get ahold of them. Then the very large boulder, which was probably about 6 feet, sticking up out of the ground, with a very large 3- to 4-inch vesicles, was a very fine-grained, dark, black, basalt, with maybe - Gee, I'd say 15-percent plagioclase in it, wouldn't you, Jim?

LMP - Yes, very fine lath.

CDR - Yes, a very fine lath and on the top, it had some smaller millimeter-size vesicles, and adjacent to it was another - lighter gray vesicular basalt, which was uniform in vesicularity, in which we didn't have time to sample, but - the vesicles in that looked similar to that one rock that we got yesterday, Jim.

CDR - The rounded one? Remember that was in the bag alone. Anyway, these vesicles were, gee I'd say 4 millimeters to - some of them were a centimeter all the way through it. And they seemed to - the two rocks seemed to be in contact with each other. Unfortunately, we didn't have time to sample the second one, but we did get a fairly good sample of the - corner of the first one (FSR "F") and the central part near one of the vesicles (Bag 204?).

SCB 6  
FSR "J"  
15059

1149.2

Glass-coated  
breccia  
"black"

ALSEP site:  
HFE drilling  
and Station  
8 sampling

XSB 92-12415  
DSB 92-12413  
DSB 92-12414

06:03:53  
to  
06:03:56

LMP - Oh, I picked up a pink rock and a black rock. And they're documented. I'm just resting up for Station 8.

LMP - I picked up that black glassy rock, Dave.

Pan 13  
92-12437, 38

SCB 6  
FSR "K"  
15058

2672.5

Basalt  
"pink"

ALSEP site

XSB 92-12410  
XSB 92-12411  
DSB 92-12412

06:03:56

LMP - And I picked up another pink one that looked like it had a lot of the plagioclase laths in it.

Pan 18  
92-12422, 23

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER    | SAMPLE WEIGHT, g | SAMPLE TYPE    | LOCATION & COMMENTS                                   | LUNAR-SURFACE PHOTOGRAPHS  | SET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|------------------|------------------|----------------|---|--|----------------------------|--|
| EVA 2            |                  |                |   |  |                            |  |
| 15001-<br>15006  | See EVA 3        | Deep Core      | ALSEP site:<br>Deep core<br><br>Recovered<br>in EVA 3 | Pan 13<br>87-12429, 30   | 06:03:58                   | CC - Roger, get Jim started on the ditching experiment, if you would please, and then I've got another good one to lay on you here. Don't quite know how to explain it. We'd like for you to try to get the deep core for us with the drill.   |
|                  |                  |                |   |  | 06:04:29                   | - - -<br>CC - Dave, are you working on the last stem there?<br><br>CDR - Yes.<br><br>CC - You are one fast worker. Okay, Dave, and take a breather, and I've got one last instruction for you here. Using the drill, we want you to break it loose and then let the drill and stem sit there in the surface, and we'll pull it out later.<br><br>CDR - Okay. Let me finish it off.<br><br>CC - And just leave the drill on the stem handle away from the Sun as long as the loops pull free. |
|                  |                  |                |   |  | 06:04:31                   | CDR - Get pictures of the drill will you, Jim? Take notes. Hey, just south of the drill, I really need a - I already did a pan here. Get your trench and get a couple of pictures of the drill to show its position.<br><br>LMP - Okay.  |
| SES: #2<br>15014 | 333.2            | French<br>Soil | ALSEP site:<br>Station 8<br>sampling                  | XSB 92-12417<br>XSB 92-12418<br>DSB 92-12419<br>XSA 92-12439<br>XSA 92-12440<br>DSA 92-12441<br>DSA 92-12442<br>DSL00<br>92-12443<br>Additional<br>photos from<br>EVA 3: | 06:04:01<br>to<br>06:04:14 | LMP - Joe, do you only want it 12 inches deep?<br><br>CC - What ever you think's reasonable, Jim.<br><br>LMP - I'm down that far already.<br>- - -<br>The wall that I'm - too bad the TV's there, Joe. You can't see the wall. Too bad; the wall is very smooth. - - - The wall is fine, yet very cohesive.<br>- - -   |

SESC #2  
15014  
cont.

Trench  
Soil

ALSEP site

DSA 88-11872  
DSA 88-11873  
XSA to 88-11874  
south 88-11875  
XSA to 88-11876  
north 88-11877

Pan 14  
92-12423,24

CC - Any sign of layering?

LMP - No signs of layering. I do find some small fragments - white fragments, black fragments. I just exposed a very small fragment about 3 millimeters of a black clast. But the wall that I've got here is only - No signs of layering at all.

LMP - When I get down under the 12-inch layer, the surface is much harder to dig through.

Looks like more of that black glass fragments. Much more cohesive down about - Well, we ought to get a good sample at the bottom of this.

Boy, it's easy to make a flat bottom because it's - so hard. I can see why Dave had a hard time digging through it - going through it now.

Say, I think I've hit bedrock. I think I've hit the bedrock!

I really do think I'm almost down to bedrock. It really is hard.

CDR - It looks like it has a little color change down there, too.

LMP - Yea, maybe a slight. Seems to get a little darker, a lighter and a little darker.

CDR - I have the photos.

LMP - Walls are just about vertical on the trench, Joe.

CDR - Okay, we need an SESC.

CC - And while you're looking down in there, how deep do you think it is now?

CDR - Oh, I'd say it's 14 - 16 inches deep, Joe.

White clast in there. A little bit more; keep coming. Good job.

LMP - Think we got enough.

CDR - Yes, sir. We got 75 percent full.

CC - Dave, is the SESC stowed now?

CDR - Oh, it's in a seat pan right now; we'll get to it later, Joe.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE   | LOCATION & COMMENTS           | LUNAR-SURFACE PHOTOGRAPHS  | SET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|---------------|-------------------------------|--|----------------|---|
| EVA 2         |                  |               |                               |  |                |   |
| Bag 252       |                  | Trench soil   | ALSEP site:                   | XSB 92-12417   | 06:04:15       | LMP - Okay, Joe. The soil samples from the bottom of the trench is in 252.                    |
| 15030         | 75.3             | Reserve fines | Station 8<br>Bottom of trench | XSB 92-12418<br>DSB 92-12419   |                |   |
| 15031         | 207.8            | <1 mm         |                               | XSA 92-12439   |                |   |
| 15032         | 7.0              | 1-2 mm        |                               | XSA 92-12440   |                |   |
| 15033         | 6.6              | 2-4 mm        |                               | DSA 92-12441   |                |   |
| 15034         | 7.0              | 4-10 mm       |                               | DSA 92-12442   |                |   |
|               |                  |               |                               | DS - Loc<br>92-12443   |                |   |
|               |                  |               |                               | Additional photos from<br>EVA 3:<br>DSA 88-11872<br>DSA 88-11873<br>XSA to 88-11874<br>south 88-11875<br>XSA to 88-11876<br>north 88-11877 |                |   |
|               |                  |               |                               | Pan 14<br>92-12423,24  |                |   |
| -----         |                  |               |                               |  |                |   |
| Bag 253       |                  | Reserve fines | ALSEP site:                   | XSB 92-12417   | 06:04:16       | LMP - Joe, I'm going to skip sampling the - side, I'm just going to sample the top over here. |
| 15040         | 113.4            | Reserve fines | Station 8<br>Top of trench    | XSB 92-12418<br>DSB 92-12419   | to<br>06:04:17 |   |
| 15041         | 269.6            | <1 mm         |                               | XSA 92-12439   |                |   |
| 15042         | 5.1              | 1-2 mm        |                               | XSA 92-12440   |                | CC - Okay, Jim. Sounds good, if you don't see layering.                                       |
| 15043         | 2.8              | 2-4 mm        |                               | DSA 92-12441   |                | - - -   |
| 15044         | 1.5              | 4-10 mm       |                               | DSA 92-12442   |                | LMP - Okay, Joe; on the top of the trench, 253.   |
|               |                  |               |                               | DS - Loc<br>92-12443   |                |   |
|               |                  |               |                               | Additional photos from<br>EVA 3:<br>DSA 88-11872<br>DSA 88-11873<br>XSA to 88-11874<br>south 88-11875<br>XSA to 88-11876<br>north 88-11877 |                |   |
|               |                  |               |                               | Pan 14<br>92-12423,24  |                |   |

Post EVA-2  
Sample  
Weight  
Report

06:06:38

LMP - Houston, this is Hadley. I have a weight report for you.

CC - Go ahead.

LMP - Roger. SRC was 40, bag 3 was 30, bag 6 33 for a total of 103. (pounds)

\*\*\*\*\*

-----  
EVA 3 TRAVERSE TO HADLEY HILLE AND RETURN TO LM  
-----

|       |       |            |              |             |          |  |
|-------|-------|------------|--------------|-------------|----------|--|
|       |       | Deep core  | ALSEP site   | XS 88-11867 | 06:20:22 | CDR - Okay, Joe. On the drill top end goes Alpha.  |
|       |       |            | Retrieving   | XS 88-11868 | to       | - - -  |
|       |       |            | deep core    | XS 88-11869 | 06:20:36 | On the bit goes Beta.  |
| 15001 | 232.8 | bottom     |              | XS 88-11870 |          | - - -  |
| 15002 | 210.1 | 3 sections |              | XS 88-11871 |          | Golly, there's some stuff in there.  |
| 15003 | 223.0 | together   |              |             |          | Coming. Okay, Joe. On the top section goes Charlie.  |
| 15004 | 210.6 |            | Pan 18       |             |          | - - -  |
| 15005 | 239.1 |            | 87-12429, 30 |             |          | Okay. Delta is the cap on top of the next section.   |
| 15006 | 227.9 | top        |              |             |          | - - -  |
|       |       |            |              |             |          | CDR - Okay. Thank you. Okay. Cap number Echo. ... the next section. Okay. Now, old buddy, if you think you can have some luck taking that off - I'll tell you what, got to break it again. |
|       |       |            |              |             |          | - - -  |
|       |       |            |              |             |          | Foxtrot on the next section.   |
|       |       |            |              |             |          | CC - Dave and Jim, put that section on the ground, if you would, please. We'll pick it up on the way back. And we want you to continue on with the Grand Prix.                             |
|       |       |            |              |             |          | CDR - All right. Good enough. Do that.   |
|       |       |            |              |             |          | - - -  |
|       |       |            |              |             |          | CDR - Boy, I tell you - my hands - done. Well, Joe, I just decided it was time to take that drill apart, and I took it apart.  |
|       |       |            |              |             |          | - - -  |
|       |       |            |              |             |          | So, now we have a three-stem section and three one-stem sections.  |
|       |       |            |              |             |          | - - -  |
|       |       |            |              |             |          | Here's the cap - and - I know it is here. Hotel is the upper part of the three-stemmed section.  |

-----  
LM to  
Station 9  
Traverse  
Approach  
to Scarp  
crater

06:21:00

to  
06:21:02

LMP - Okay; we're heading, 087. Right now, we're heading 2 - oh, about 250. Range, 1.5. Boy, look at the fresh blocks ahead of us.

CC - You must be very near Scarp crater.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER                                   | SAMPLE WEIGHT, g | SAMPLE TYPE           | LOCATION & COMMENTS                                     | LUNAR-SURFACE PHOTOGRAPHS                     | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES  |
|---|------------------|-----------------------|---|---|----------------|--|
| EVA 3 TRAVERSE TO HADLEY RILLE AND RETURN TO LM |                  |                       |   |   |                |  |
|   |                  |                       |   |   |                | LMP - I was going to say, that's probably Scarp crater.  |
|   |                  |                       |   |   |                | CDR - Good fresh one.  |
|   |                  |                       |   |   |                | LMP - It sure kicked up a lot of rocks. What are you going to do, go on the north side of it?  |
|   |                  |                       |   |   |                | CDR - I want to take a look and see if that's it. Yes. Boy, it's really fresh with a lot of debris. Nice ejecta blanket. Nice ejecta blanket. Good typical one. That's Scarp. And we're 088 for 1.6. I'd say this is probably Scarp crater, wouldn't you?  |
|   |                  |                       | Arrive at Station 9 Scarp crater                        | Pan 20 at Station 9 82-11066 through 82-11092 |                | LMP - I would because we can definitely see the far side of the rille now.   |
|   |                  |                       |   |   |                | Probably see - oh, 10 to 15 percent of the far side.   |
| Bag 273   |                  | Clod, caked           | Station 9 Scarp crater                                  | XSB 82-11093                                  | 06:21:05       | CDR - I'll get a pan from the rim of Scarp. And the rim is very, very soft. My boot sinks in a good - if I push on it, a good 4 inches. And the whole center part of the crater is just full of debris. Very angular, glass in the center. It's about - oh, - I guess, 40 meters across and maybe 5 or 6 meters - No, - not that much - 3 or 4 meters deep. And a slightly raised rim. And ejecta blanket that goes out about one crater diameter, quite uniform I don't see any rays. There are slickensides on some of the fragments. And we'll get the sample in a second here. |
| 15510   | 72.3             | Reserve fines         | Rim of Scarp crater in                                  | XSB 82-11094<br>XSB 82-11098<br>XSB 82-11099  | to<br>06:21:10 |  |
| 15511   | 193.1            | <1 mm                 |   | XSA 82-11100                                  |                |  |
| 15512   | 4.9              | 1-2 mm                |   | Pan 20  |                |  |
| 15513   | 4.4              | 2-4 mm                |   | 82-11089,90                                   |                |  |
| 15514   | 1.1              | 4-10 mm               |   |   |                |  |
| 15515, 1-4B                                     | 144.7            | Total of broken clods | Probably broken from two fragments that were picked up. |   |                | There's a little bench in the bottom of Scarp crater, halfway up - about a tenth the diameter of the crater. And it's only in - and it seems to be all the way around, somewhat irregularly.   |

Bag 273  
15510-  
15515  
cont.

Station 9  
Scarp Crater

82-11101  
through  
82-11104  
Boulder with  
slickensides

CDR - Okay, I'm going to get a couple of samples from the rim here - on the surface. Oops, the first one I tried to pick up, just fell apart. Get a couple pieces of it. Won't be able to look at it for you, but I'll bring it home. It's a clod - it's just a caked clod. And it's in 273.

...  
CDR - ... Look at that, there's slickenside on that one. Okay. Get some on the rim.

LMP - Boy, this is - well, you've probably commented - sure is a unique crater. \*\*\* unique - that we've seen so far.

CDR - Yes, you're right.

LMP - Very soft on the rim. - - - Boy, you sink in about 6 inches.

CDR - Look just like big pieces of mud, don't they? Okay, let's take a couple of steps out the rim here. I got one on the rim.

-----  
Bag 255

15500 24.8 Reserve  
fines  
15501 103.0 <1 mm  
15502 4.4 1-2 mm  
15503 3.8 2-4 mm  
15504 4.1 4-10 mm  
15505 1147.4 breccia  
15506 22.9 microbreccia  
15507 3.9 glass bead  
15508 1.4 microbreccia

Station 9 XSB 82-11105 06:21:10  
Scarp crater XSB 82-11106 to  
XSA 82-11109 06:21:13  
DSB 82-11107  
Loc 92-11108

Pan 20  
82-11090,91

CDR - Yes. Let's go down here - you know - a ways out in the ejecta, and see if we can get a couple more. Here's a nice big one. It's too big for the bag. There's so much sparklies in it, Jim. Think we can get that in the bag? I'll try.

LMP - You know, this has the appearance of those small ones that we sampled, with the exception, there's no concentration of glass in the very center, except every fragment has glass on it.

15505-15508 may have broken from 15505

CDR - That's right. Well, not every fragment, many of these clods don't have any at all. Most of them don't have any glass. Get that one there. Get me a - oh, you got a bag, okay. Just a second here.

...  
... Bag number 255 is covered with dirt, but it looks just like a big piece of glass.

LMP - You want me to put some fines in with this, Dave?

CC - Roger. Jim, throw in a little soil there, please.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS | LUNAR-SURFACE PHOTOGRAPHS | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|-------------|---------------------|---------------------------|----------------|---|
| -----         |                  |             |                     |                           |                |   |
| EVA 3         |                  |             |                     |                           |                |   |
| -----         |                  |             |                     |                           |                |   |
| Bag 255       |                  |             |                     |                           |                | CDR - Here, let me have the bag.  |
| 15500-        |                  |             |                     |                           |                | CDR - ... - Don't mess up where the rock was, but pick up that little glass ball next to you, too. See that little glass ball next to where you scooped up? |
| 15508         |                  |             |                     |                           |                | LMP - To the left of it, you mean?  |
| cont.         |                  |             |                     |                           |                | CDR - Yes.  |
|               |                  |             |                     |                           |                | LMP - That's an idea.   |
|               |                  |             |                     |                           |                | CDR - Yes. That's all. That's it. Now we're about full. Bet you dropped it, Jim.  |
|               |                  |             |                     |                           |                | LMP - Yes.  |
| -----         |                  |             |                     |                           |                |   |
|               |                  |             | Station 9 to        |                           | 06:21:17       | LMP - Ready. Okay, we're moving west.   |
|               |                  |             | Station 9A          |                           | to             | - - -   |
|               |                  |             | Traverse            |                           | 06:21:21       | LMP - ... On the far side of the rille there, Dave, I sure see layering - over at 1 o'clock.  |
|               |                  |             |                     |                           |                | - - -   |
|               |                  |             |                     |                           |                | LMP - Good places all along here to sample - large blocks on this side of the rille.  |
|               |                  |             |                     |                           |                | - - -   |
|               |                  |             |                     |                           |                | Look down there at 12:30. It looks like the block's there, almost in position.  |
|               |                  |             |                     |                           |                | CDR - Sure do. That's a big outcrop.  |
|               |                  |             |                     |                           |                | LMP - Yes.  |
|               |                  |             | Arrive at           | Pan at 9A:                |                | CDR - And we are on the terrace. And there is a terrace.  |
|               |                  |             | Station 9A          | 82-11110                  |                | - - -   |
|               |                  |             | Edge of             | through                   |                | CDR - Certainly. We're off and stopped; and let me get on with this task here.  |
|               |                  |             | the Rille           | 82-11127                  |                |   |
|               |                  |             | Terrace             |                           |                |   |
| -----         |                  |             |                     |                           |                |   |

Station 9A 500 mm of 06:21:23  
Hadley Rille to  
Rille 89-12015 06:21:26  
Description through  
of Hadley 89-12096  
Rille

CDR - I can see from up at the top of the rille down, there's debris all the way. And, it looks like some outcrops directly at about 11 o'clock to the sun line. It looks like a layer. About 5 percent of the rille wall, with a vertical face on it. And, within the vertical face, I can see other small lineations - horizontal about maybe 10 percent of that unit. And that unit outcrops along the rille. It's about 10 percent from the top, and it's somewhat irregular; but it looks to be a continuous layer. It may be portions of flows, but they're generally at about the 10-percent level. I can see another one at about 12 o'clock to the sun line, which is somewhat thinner, maybe 5 percent of the total depth of the rille. However, it has a more well-defined interior - internal layering of about 10 percent of its thickness. I can see maybe 10 very well-defined layers within that unit.

CDR - As I go down the rille, below this - okay - below this upper layered - 10 percent - there seems to be mostly debris in the order of large angular fragments, maybe the largest being like 5 percent of the total depth of the rille. And then they gradually break on down to very small fragments and a talus slope. I see no significant collection of talus at any level. It seems to be fairly uniformly distributed in patches all the way down, to as far as I can see, to the bottom of the rille. In looking on to my - 12:30 to 1 o'clock - on up the rille - And, I guess we'll get a little closer, when we get down to sampling it down there. Why, it looks very much the same. Outcrops of this one unit, irregularly spaced, discontinuous, but along the general 10 percent of the top line; with the talus sliding down into the bottom of the rille. I see no differences in color. However, the vertical section of the unit, which is exposed, looks to be somewhat lighter in gray. The blocks, which have fallen down into the talus, seem to have a more tan - or different tone of gray or color to them. Sort of like the fresh vertical section was more recently exposed. Let me - let you digest that for a minute, and let me take a bunch of 500's. I'll get you the vertical and the horizontal and - boy, there's lots of things to shoot at over there. Jim, where'd you take the pan? Right over here?

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER             | SAMPLE WEIGHT, g | SAMPLE TYPE       | LOCATION & COMMENTS   | LUNAR-SURFACE PHOTOGRAPHS                                     | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES   |
|---------------------------|------------------|-------------------|---|---|----------------------------|---|
| EVA 3                     |                  |                   |   |   |                            |   |
| Bag 274<br>15528<br>15529 | 4.7<br>1531.0    | breccia<br>basalt | Station 9A<br>Hadley<br>Rille                                       | XS 82-11129<br>DS 82-11128<br>Pan 21<br>82-11119,20           | 06:21:27                   | LMP - Okay, Joe. I just sampled a fragment here with a great number of vesicles - vesicles about 2 millimeters in diameter. It's in 274.  |
|                           |                  |                   | Description of angular basalt boulder                               | XS 82-11130<br>XS 82-11131<br>XS 82-11132<br>(also in pan 21) | 06:21:28                   | LMP - And down about - oh, 20 feet from where Dave's taking a picture, there's a - a block about 2 feet; it's almost rectangular. And, the top surface is covered with large vesicles. It almost looks like a contact there between a thin - that thin layer of vesicles and a more - a rock that's a little lighter in color with fewer vesicles. In fact, there's real - horizontal orientation of the vesicles in this one. I'll take a closeup on it.   |
|                           |                  |                   | Station 9A<br>Hadley<br>Rille<br>Terrace<br>Geologic<br>description |   | 06:21:30<br>to<br>06:21:32 | LMP - You are looking to the south along the rim, along the - this side of the rille. Dave, could you comment on that horizontal bedding that's probably - oh, at least 1 kilometer south us? And higher elevation.<br><br>CDR - On the other side?<br><br>LMP - No, this side.<br><br>CDR - No, I didn't even look on this side, to tell you the truth, Jim. Oh, I can see a couple of outcrops on the far side, which look like they might be in place at about the 40-percent level - of the rille. Very large boulders with fractures in them, rounded. |

Station 9A  
Hadley  
Rille  
Terrace  
Geologic  
description  
cont.

CDR - It's hard to tell whether they're really in place, but they may be in place covered by talus. And they're about 50 percent down. Let's see if there's any continuity to it. I can see some suggestions of continuity there. Jim, look at that. Well, it looks like the talus of fragments and fines is covering another layer. Or a suggestion of continuity of outcrops, which are rounded, at about the 40- to 50-percent level down.

- - -  
I guess that'll do it for here. To summarize here, I think we see from the top to the bottom, one distinct layer about 10 percent, which has the multilayers layers within it. And, another at about 40 percent, which looks like a solid unit of a somewhat tanner hard rock, but it's covered with fines and talus. And, we haven't seen to the bottom; I think we'll get a chance to look further down on it.

244

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|         |        |           |            |              |          |   |
|---------|--------|-----------|------------|--------------|----------|---|
| SCB 2   |        |           | Station 9A | XSB 32-11135 | 06:21:34 | LMP - Joe, I'm documenting another rock - |
| FSR "J" |        | Vesicular | Rille      | DSB 82-11133 |          | here that looks fairly - representative   |
| 15556   | 1542.3 | basalt    | Terrace    | DSB 32-11134 |          | of what's - on the surface here.          |

Pan 21  
82-11117, 18

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|         |        |        |            |              |          |  |
|---------|--------|--------|------------|--------------|----------|--|
| SCB 2   |        |        | Station 9A | XSB 92-11137 | 06:21:36 | LMP - ... I think we ought to - ... move |
| FSR "K" |        | Basalt |            | DSB 92-11136 |          | downslope - - to the large block.        |
| 15557   | 2518.0 |        |            |              |          |  |

Pan 21  
82-11110

CDR - Yes. Let's go down there and sample.  
- - -  
LMP - Why don't you head down, I'll be right behind you. I've got one more here I want to gather.

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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE                                 | LOCATION & COMMENTS                                       | LUNAR-SURFACE PHOTOGRAPHS                                    | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|---|---|--|----------------------------|--|
| EVA 3         |                  |   |   |  |                            |  |
| Bag 275       |                  | 4 rock frags<br>soil + chip<br>from boulder | Station 9A<br>Rille<br>Terrace<br>Includes 2<br>fragments | XSB 82-11139<br>XSB 82-11140<br>XSA 82-11141<br>DSB 82-11138 | 06:21:36<br>to<br>06:21:43 | CDR - Right. Let's - We'll just ease down to this outcrop here in front of us. Good solid firm ground here, Joe. Good footing. As you could probably see.<br>- - -   |
| 15530         | 138.0            | Reserve<br>fines                            | (possibly<br>broken apart                                 | Pan 21<br>82-11126   |                            | Aha! Here's some - oh well, we got to get some of that. Gosh, big angular blocks. Vesicles. It looks like a basalt, and I see plagioclase in it. To break a chip off from one of those.<br>- - -   |
| 15531         | 136.0            | <1 mm                                       | from one)   |  |                            |  |
| 15532         | 6.3              | 1-2 mm                                      | chipped from  |  |                            |  |
| 15533         | 5.4              | 2-4 mm                                      | basalt  |  |                            |  |
| 15534         | 6.0              | 4-10 mm                                     | boulder,  |  |                            |  |
| 15535         | 404.4            | basalt chip                                 | with 2  |  |                            | Okay. Let's sample this out - see these frags right on the surface here?<br>- - -  |
| 15536         | 317.2            | basalt chip                                 | fragments   |  |                            |  |
| 15537         | 1.9              | basalt                                      | collected   |  |                            |  |
| 15538         | 2.6              | microgabbro                                 | nearby  |  |                            | LMP - Yes, they're all the same.<br>- - -<br>Pick one and I'll take the pictures.  |
|               |                  |   |   |  |                            | CDR - Okay. Right there. We'll do that one right there.<br>- - -   |
|               |                  |   |   |  |                            | LMP - Get a fragment off it, you mean?   |
|               |                  |   |   |  |                            | CDR - Yes. Uh, huh.<br>- - -   |
|               |                  |   |   |  |                            | CDR - Watch. Keep your eye on it. Did you see where that frag went?  |
|               |                  |   |   |  |                            | LMP - No, I didn't see that.   |
|               |                  |   |   |  |                            | CDR - Keep your eye on what I got here. There.   |
|               |                  |   |   |  |                            | LMP - Okay.  |
|               |                  |   |   |  |                            | CDR - Oh, oh, oh, oh, oh. Don't lose that one.   |
|               |                  |   |   |  |                            | LMP - I see it.  |
|               |                  |   |   |  |                            | CDR - Okay, I got the tongs. Get your bag out.<br>- - -<br>Joe, this is a tan, fine-grained crystalline rock. I've got to say that, because it's got - up to 2-millimeter laths of plagioclase in it randomly oriented. And the matrix is a sort of light gray to tan. |

Bag 275  
15530-  
15538  
cont.

CDR - It's a very well- indurated rock. On the outside, I've got nice glass-filled tip, and some other pits in it. It's sure solid and - sure looks crystalline. It's a beauty. It came from this large block over here at 275.

LMP - You want to put some of those other fragments that are - -  
- - -

CDR - Why don't I just get some of the other frags right there.

LMP - Yes.

CDR - Bring your bag.  
- - -

CDR - - - That's true bedrock.

LMP - Yes.

CDR - It's just too massive not to be. Okay, that one's too much. Watch it! Here let me hold that frag. Get a scoop for the fines, and then put the other frag in the bag, too. Up - Yes. That one - right there - that a boy. Okay. Okay, now.

CDR - Okay, Joe. That chip off the old boulder there was 275. Why don't you get this one. And I'll get - Oh, man - seven bags. Let me get a bag off of you there.

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|         |       |        |              |              |          |
|---------|-------|--------|--------------|--------------|----------|
| Bag 278 |       | frags  | Station 9A   | XSB 82-11139 | 06:21:44 |
| 15545   | 745.6 | basalt | Small frag-  | XSB 82-11140 |          |
| 15546   | 27.8  | basalt | ments picked | XSA 82-11141 |          |
| 15547   | 20.1  | basalt | up with      | DSB 82-11138 |          |
| 15548   | 3.3   | basalt | tongs - same |              |          |
|         |       |        | loc. as      | Pan 21       |          |
|         |       |        | frags &      | 82-11126     |          |
|         |       |        | soil in 275  |              |          |

CDR - Little ones here. And 278.

CC - Copy that. And out of sheer curiosity, how far back from what you would call the edge of the rille are the two of you standing now?

CDR - All right. I don't know - well, from where the - about 50 meters from where I guess we'd say we see real outcrop.

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|         |       |             |              |              |          |
|---------|-------|-------------|--------------|--------------|----------|
| Bag 291 |       |             | Station 9A   | XSB 82-11143 | 06:21:45 |
| 15595   | 237.6 | Basalt chip | 2 fragments  | XSB 82-11144 | to       |
| 15596   | 224.8 | Basalt chip | chipped from | DSB 82-11142 | 06:21:50 |
| 15597   | 145.7 | Basalt      | boulder,     | XSA 82-11145 |          |
| 15598   | 135.7 | Basalt      | with 2       | XSA 82-11146 |          |
|         |       |             | others from  |              |          |
|         |       |             | ground       | Pan 21       |          |
|         |       |             | nearby       | 82-11126     |          |

CDR - ... Let's go down and get a chunk of the bedrock here.

LMP - Oh, you're getting the bedrock here, huh?

CDR - Yes.

LMP - Okay. I thought you were going to press on to the north.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER                       | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS           | LUNAR-SURFACE PHOTOGRAPHS | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES  |
|-------------------------------------|------------------|-------------|-------------------------------|---------------------------|----------------|--|
| -----                               |                  |             |                               |                           |                |  |
| EVA 3                               |                  |             |                               |                           |                |  |
| -----                               |                  |             |                               |                           |                |  |
| Bag 281<br>15595-<br>15598<br>cont. |                  |             | Station 9A<br>Halley<br>Rille |                           |                | <p>CDR - Well, he said go get the bedrock, and I think we ought to try and get it if we can. Because this sure looks like a bedrock to me. I looked at the rille and down the rille to the south, and it's just one great big massive layer of the same kind of fragmental debris on the order of meters. Quite well-rounded.</p> <p>LMP - Yes, but the thing that bothers me, Dave, is look to the north there. - - - there's a flat area there, it looks like it might be the top of the bedrock. And those blocks are - seem to be slightly different.</p> <p>CDR - Darker. - - - A little darker.</p> <p>LMP - - - almost have columnar jointing. Look to the north there.</p> <p>CDR - Yes, I see what you are talking about. Come on down here and let's get a frag off of one of these boulders and then we'll head on back to the Rover.<br/>- - -<br/>That's a good one.<br/>- - -<br/>Hey, Joe, these rounded fragments down here are on the order of meters in size; expose some very large - oh, 2 - 3 centimeter vesicles - rather than the finer stuff that Jim saw back there before.</p> <p>CDR - And I believe, when I take a chip out of this, we're going to find it's the same kind of crystalline basalt. And they're all - well, they're subangular - looks like they've been weathered. Fairly clean on the surface and all buried. And I can look down to the south, and it's just a whole mass of great big boulders along the terrace here. And there's another breakoff down into the rille. And I'm - I guess, we're just about at the lip.<br/>- - -<br/>Beautiful stuff. Okay; I got them all located - in bag -</p> |

Bag 291  
15595-  
15598  
cont.

LMP - Okay; 281.

CDR - Okay; this is a - looks like a darker, fine-grained, black, vesicular basalt, with vesicles on the order of millimeters. Nonuniformly distributed. There are a mass of plagioclase about 3 millimeters long, and it may be a half a millimeter wide, randomly oriented throughout. And that's about the only other mineral I see. And that - did you get the number on that, Jim?

LMP - I gave it to them.

CDR - There's one other frag down here that fell. About like that. Let me get a couple of rounded ones here, too, that are just on the surface. I can't tell what that is, but we'll put it in anyway, as representative of surface material - at least the fragmental surface. Okay; why don't you zip that one? Here let me zip it, and you can take the after picture, Jim.

LMP - Okay; I have it.

CDR - Okay. Told them that was 281.  
Boy, what a rock.

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|                                  |             |          |
|----------------------------------|-------------|----------|
| Station 9A                       | XS 82-11148 |          |
| Moving back                      | XS 82-11149 | 06:21:51 |
| uphill to                        | XS 92-11150 |          |
| the Rover/<br>Layered<br>boulder |             |          |
| No sample                        |             |          |

CDR - Okay, let's head back to the Rover.  
Oooh! Oooh! You can see a boulder exposed to the surface here, which has got layering within it. It's been weathered away, apparently, and just the surface top is exposed but the boulder must be - oh, about a meter long with 2- to 3-inch layers in it. Would you get a picture of that where I stopped, Jim, just a quicky cross-Sun? See where that thing is exposed there?  
See those little layers.  
Here. As a matter of fact, I'll drop the gnomon; that'll tell them what it was - Just to get a real quick picture. Oh, you're kicking up white albedo.

LMP - Yes. I know it.

CDR - That's the only place I've seen it. Get a little closer, huh?

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE           | LOCATION & COMMENTS                         | LUNAR-SURFACE PHOTOGRAPHS  | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|-----------------------|---|--|----------------------------|--|
| EVA 3         |                  |                       |   |  |                            |  |
| Bag 282       |                  | Rake sample fragments | Station 9A Near Rover, down hill a few feet | XSB 82-11151<br>XSB 82-11152<br>DSB 92-11153<br>XSA 82-11154<br>XSA 92-11155 | 06:21:54<br>to<br>06:21:59 | LMP - Okay. Pick a spot. I'll rake.<br>CDR - Why don't we take a few steps down, Jim?<br>LMP - Okay.<br>CDR - So we get where there's more frags down here, I think.<br>LMP - Looks like they'll be large - too large down there.<br>CDR - No. Right here. *** a good spot.<br>- - -<br>LMP - Okay. I need a bag.<br>CDR - Yes, sir. Okay. 282. Ooop, oh. Gee, I just walked right into your area. Sorry. Oh, you getting some. Looks like some laths, vesicular basalt, non-vesicular basalt. Do it again.<br>LMP - Okay, I'll try to avoid that larger one there.<br>CDR - Yes. And I think I kicked up some more light-colored albedo. I think, if we have some time when you get through, we ought to make a quick trench, here, maybe. It looks like maybe the upper couple of inches might be - the dark gray and below it the very light gray albedo. Okay; there's two swaths about a meter long and one rake-width wide.<br>- - -<br>He's getting about - oh, 8 to 10 in each one, and it seems like there's a fair variety in there.<br>- - -<br>Yes. Hey, do it once - Let me move the gnomon here. We'll - They can reconstruct that. Take another swath over here so -<br>LMP - Do the ... so I can take two swaths, if you want.<br>- - -<br>CDR - Yes. It looks like you're getting a good - 2 to 3 inches down, as you rake through there. |
| 15612-15683   | 873.4            | basalt                |   |  |                            |  |
| 15684-15689   | 12.6             | breccia with glass    |   | Pan 21<br>91-11123   |                            |  |

Bag 282  
15612-  
15689  
cont.

Station 9A

LMP - Must be hung up on a large one here.

CDR - Yes, that's right.  
- - -

LMP - I'll rake another one. Take one more.  
We'll fill the bag.  
- - -

CDR - Okay. Get one more load.

LMP - There's a big rock in there, huh? Okay,  
there you go. Okay.

CDR - Okay, maybe one more. Let's get a -  
whole bag full.  
- - -

CDR - Good. Good, comprehensive sample. Now  
we need some soil. I think that's  
probably the best one they'll see.  
- - -

CDR - And, Joe, you can remember on this  
particular sample that I moved the  
gnomon about 2 feet, so Jim could get  
a 1, 2, 3, 4, - I guess we got 1, 2,  
3, 4, 5 swaths there. --- about a meter  
each ...

250

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|         |       |               |             |              |          |
|---------|-------|---------------|-------------|--------------|----------|
| Bag 283 |       | Comprehensive | Station 9A  | XSB 82-11151 | 06:21:59 |
|         |       | soil          | Same        | XSB 82-11152 | to       |
| 15600   | 449.1 | Reserve       | location as | DSB 82-11153 | 06:22:00 |
|         |       | finer         | rake sample | XSA 82-11154 |          |
| 15601   | 802.0 | <1 mm         |             | XSA 82-11155 |          |
| 15602   | 32.9  | 1-2 mm        |             |              |          |
| 15603   | 25.5  | 2-4 mm        |             | Pan 21       |          |
| 15604   | 21.5  | 4-10 mm       |             | 82-11123     |          |
| 15605   | 6.1   | Basalt        |             |              |          |
| 15606   | 10.1  | Basalt        |             |              |          |
| 15607   | 14.8  | Basalt        |             |              |          |
| 15608   | 1.2   | Basalt        |             |              |          |
| 15609   | 1.1   | Basalt        |             |              |          |
| 15610   | 1.5   | Basalt        |             |              |          |

CDR - 283 for the soil.

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|         |       |       |            |               |          |
|---------|-------|-------|------------|---------------|----------|
| Double  |       | Drive | Station 9A | XSB 82-11156  |          |
| Core    |       | tube  | Hadley     | XSB 82-11157  | 06:21:58 |
| U-09    |       |       | Rille      | DSB 82-11158  | to       |
| L-14    |       |       |            | Loc. 82-11159 | 06:22:08 |
| 15011   | 553.6 |       |            | XS during     |          |
| (Upper) |       |       |            | 82-11160      |          |
| 15010   | 740.4 |       |            | 82-11161      |          |
| (Lower) |       |       |            | 82-11162      |          |
|         |       |       |            | XSA (hole)    |          |
|         |       |       |            | 82-11163      |          |

CDR - Hey, Joe, how about a quick single  
core here.

CC - Yes, sir, or maybe even a double core.  
We think you can probably drive two of  
them.

CDR - Okay. I think we probably can, too.  
I was just giving you a little bait there.  
- - -

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE NUMBER                          | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS           | LUNAR-SURFACE PHOTOGRAPHS | GET DAY:HR:MIN | CREW COMMENTS RELATING TO SAMPLES   |
|--|------------------|-------------|-------------------------------|---------------------------|----------------|---|
| EVA 3                                  |                  |             |                               |                           |                |   |
| Double Core<br>15010<br>15011<br>cont. |                  |             | Station 9A<br>Hadley<br>Rille | Pan 21<br>82-11123,24     |                | ... But you know, I don't know, a double core - we may find ourselves iriving into bedrock if we're not careful.<br>- - -<br>CDR - There's a nice crater here - on the edge. Maybe we hit the rim of that crater.<br>- - -<br>Cut the rim of the crater, Jim. I bet we can do a good one right there. - - -<br>And, I see some white-colored albedo near the - -<br>CC - - - bad information I gave to you. I guess we'd prefer it away from the rim.<br>- - -<br>CDR - Yes, sir. Okay.<br>- - -<br>And there's light-colored albedo ... by the lower side of the - -<br>- - -<br>Okay, this - right here, Jim. This ought to do - -<br>- - -<br>LMP - Yes. Okay, I have a number - - - 09.<br>- - -<br>You know, the - that light-colored albedo normally occurs on the lower - lower rim or the downhill rim.<br>CDR - Yes. Go ahead, Jim. Get the other core. You're right.<br>- - -<br>LMP - Pushing - - - I'll push a little more.<br>CDR - Yes. Got a half a tube - ooh. Good, nice. You got three-quarters?<br>LMP - Yes. It feels like it's - hung up on a rock.<br>CDR - Okay. I got the picture. Go ahead and hammer. Rock, huh? No, it's going in. You're getting it. There's a full core. Have at it. You're getting a couple inches a stroke. Very nice. Okay. There's one and a half. Good. Doing good. |

- - -  
CDR - Notice when you hit it, the whole ground around it raises up - for about an inch away from the core. You've got about three more smacks, and you ought to have it all the way in.  
Hey, good. I'll give you a double core on that.  
- - -

LMP - No wonder it was hard pounding. Got a rock right in the bottom of the -

CDR - Might clean it off so you get a good seal on the cap, Jim. Get a good seal?

LMP - I think we got a good seal.  
- - -

Okay, 4. And that was - Let's see, 4 #L-14° was the lower and 60 #U-09° was the upper.

BSLSS  
FSR "L"  
15555

9613.7

Basalt

Station 9A XSB 32-11164  
(only photo)  
Halley  
Rille Pan 21  
Terrace 32-11124

06:22:08

to

06:22:10

CC - Dave --- our next request is two undocumented 6-inch blocks, and then we'll want you on the Rover driving north.

CDR - Okay, Joe. **After a picture.** We're all loaded up.

LMP - Two undocumented 6-inch blocks.  
- - -

CDR - You get one and I'll get one.  
- - -

It's a vesicular one. Hey, here's a good vesicular one.

LMP may be referring back to the vesicular basalt (15556) that he documented at 06:21:34

06:22:08

to

06:22:10

- - -  
CDR - You got one that's vesicular, or not?  
- - -

LMP - Yes, I do. But - - I don't know if we want to be too selective here if we're supposed to move on.

CDR - Yes. Right. Okay.  
- - -

Got a good one. - - - A little better than 6 inches, but it was neat looking.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE | LOCATION & COMMENTS             | LUNAR-SURFACE PHOTOGRAPHS | GET DAY:HR:MIN       | CREW COMMENTS RELATING TO SAMPLES   |
|---------------|------------------|-------------|---------------------------------|---------------------------|----------------------|---|
| EVA 3         |                  |             |                                 |                           |                      |   |
|               |                  |             | Station 9A to Station 10        |                           | 06:22:15 to 06:22:17 | CDR - How much farther we got to go? I got to plan where we're heading here.  |
|               |                  |             | Traverse approaching Station 10 |                           |                      | LMP - - - Oh, another click, Dave. Maybe up by that large block at 12:00 o'clock.   |
|               |                  |             |                                 |                           |                      | CDR - Gee, the one with the great big vesicles in it.   |
|               |                  |             |                                 |                           |                      | LMP - Oh, notice that fresh one that's just this side of it? It looks like a light color, almost a yellow - ray that extends to the west of it? |
|               |                  |             |                                 |                           |                      | CDR - Ooooh, look at this. This is one of the Twins.  |
|               |                  |             |                                 |                           |                      | LMP - Yes. It probably is, yes.   |
|               |                  |             |                                 |                           |                      | CDR - Man, we're right at it, and it's a deep fellow.   |
|               |                  |             |                                 |                           |                      | LMP - Yes. There's a flat part over there to the left.  |
|               |                  |             |                                 |                           |                      | CDR - Yes. Look at that great vesicular one there.  |
|               |                  |             |                                 |                           |                      | Let me get to this level spot over here. Okay, up on the rim of the Twin there would be a great place to take a pan.                            |
|               |                  |             |                                 |                           |                      | LMP - Either that or over on those rocks over at 11 o'clock.  |
|               |                  |             | Arrive Station 10               |                           |                      | CDR - Yes, maybe, maybe. ... to the rim of the Twin there.  |
|               |                  |             |                                 |                           |                      | CDR - Okay. We stopped, Joe.  |

Station 10 Pan:  
Stop for 82-11165  
photographs through  
only 92-11184

06:22:17  
to  
06:22:28

CDR - ... The crater is very uniform. It has debris on the order of - oh, a foot or so - almost throughout. No accumulation of talus at the bottom, and it's got fines covering everything, nothing really sharply exposed. And most of the fragments are subangular and it looks like nonvesicular, although I do see one high vesicular one right in the bottom. And it's about 60 meters across and maybe - oh, 10 meters deep, smooth sides, and a very slightly raised rim.

- - -  
And, as craters go around here, it's deep.

LMP - Well, there's a large block there just to the north of that, Dave. It looks like it might have a contact in it - between a dark, very vesicular basalt and that light colored - tan.

4' x 5' rock CU stereo  
with 2-3" XS 82-11195  
vesicles XS 92-11196  
DS 82-11187  
XS loc  
82-11190

LMP - I've got an angular fragment here - sub-angular, about 4 feet by 5 feet, and the vesicles on - that are facing to the southwest are very large vesicles, about 3 inches, 2 to 3 inches in diameter. ... - -  
- - then there's a gradual - - transition -  
Oh, I'd love to bring it back. I guess I'll just take some closeups here.

Low rock XS to south  
with fillet 82-11188  
near 4' x 5' XS to north  
rock above 82-11189  
XS loc  
82-11190

- - -  
Just to the north of this - the large one. I just mentioned, there're two other large fragments. And there's a fracture right between them, and they also have the large vesicle pattern.

CC - Roger, Jim. Copy.

LMP - I've already sampled this one. And the material that has the large vesicles has long laths of probably plagioclase. - - -  
long lath's about - centimeter.

CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
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| SAMPLE NUMBER | SAMPLE WEIGHT, g | SAMPLE TYPE                             | LOCATION & COMMENTS  | LUNAR-SURFACE PHOTOGRAPHS                                | GET DAY:HR:MIN             | CREW COMMENTS RELATING TO SAMPLES  |
|---------------|------------------|---|--|--|----------------------------|--|
| EVA 3         |                  |   |  |  |                            |  |
|               |                  |   | Station 10<br>to LM<br>Traverse  | 82-11191<br>through<br>82-11195<br>enroute<br>on LRV     | 06:22:29<br>to<br>06:22:44 |  |
|               |                  |   | Comments and activities pertaining to the deep core are included following earlier comments at GET 06:20:22 through 06:20:36 |  |                            |  |
| SCB 2         |                  |   |  |  |                            |  |
|               |                  |   | At the LM,<br>at end of<br>EVA 3   | Pan 300 feet<br>East of LM<br>88-11195<br>to<br>88-11925 | 06:22:56<br>to<br>06:23:09 | CC - ... We need a EMU status check from both of you, and we're 5 minutes from closeout. All we need is a few grab samples.<br>- - - |
|               |                  |   |  |  |                            | CC - Okay, troops, we're asking for the undocumented samples to go into - - the BSLSS bag, please.<br>- - -                          |
| FSR "X"       |                  |   |  |  | 06:22:57                   | CDR - We'll do that. Just grab a bunch, huh?   |
| 15558         | 1333.3           | breccia                                 | /1   |  | 06:22:58                   | Hey, Joe, how about bag - oh, well, okay - BSLSS bag.<br>- - -   |
| FSR "Y"       |                  |   |  |  |                            | LMP - - - Do you want to get that descent engine sample?<br>- - -  |
| 15555, 1-38   | 822.6            | breccia fragments (single broken rock?) |  |  |                            | Dave, we have everything in this bag that you're going to put in it, right? In this bag here?  |
| 15561         | 112.5            | <1 mm fines                             | Residue from   |  |                            | CDR - Yes. But how about the rocks under the seat?<br>- - -  |
| 15562         | 20.6             | 1-2 mm                                  |  |  |                            | LMP - Yes. I've already put those in there. That's why I wanted to get the right bag.  |
| 15563         | 30.4             | 2-4 mm                                  | SCB-2  |  |                            |  |
| 15564         | 50.0             | 4-10 mm                                 |  |  |                            |  |

/1 Lunar locations of these samples have not been identified. Station 9 and the LM site are the most probable sources if these samples were collected during EVA 3.

- - -  
CDR - Okay, I'm working on the bag 2, right now, Joe. Taking the caps out of it that we have not used, we've got an SESC here that hasn't been used, and then I'm putting - the rocks and samples that are under my seat in bag 2.

LMP - Did you document this large one, Dave?

CDR - Sort of.

LMP - Okay, I'll try to get it in this bag, then. It'll be a heavy bag. I think I'll wait and put that in the - BSLSS bag.  
- - -

---

|                |              |              |              |          |  |
|----------------|--------------|--------------|--------------|----------|--|
| SESC - (blank) | Contaminated | Collected NE | XSB 99-11884 | 06:23:04 | CDR - Okay. Let's get the descent engine |
| 15013          | sample       | of DPS       | XSB 88-11885 | to       | sample, Jim.                             |
| 296.2          |              | engine       | DSB 88-11886 | 06:23:06 | - - -                                    |
| (net)          |              | bell,        | XSA 99-11887 |          | LMP - I'll get the SESC.                 |
|                |              | between +Y   |              |          | CDR - - - yes, and a scoop.              |
|                |              | and -Z       |              |          | CDR - Okay. Let me get the pictures.     |
|                |              | struts       |              |          | Okay. Need to fill that little jewel.    |

CDR - Okay. Let's get the descent engine sample, Jim.

- - -  
LMP - I'll get the SESC.

CDR - - - yes, and a scoop.

CDR - Okay. Let me get the pictures. Okay. Need to fill that little jewel. Fill it!

LMP - Don't spill it, I want to get the top part.

CDR - I won't

LMP - Get some more in there?

CDR - Yes, scoop up the top layer there right next to the one you just scooped. You can put the top half inch or so.

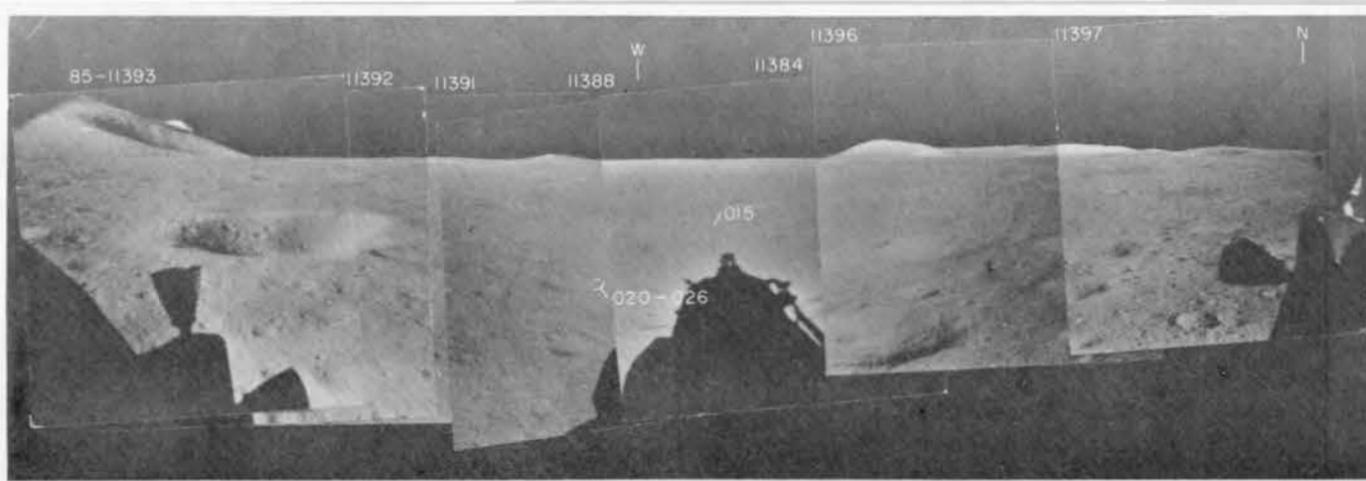
CDR - That looked good, Jim. Okay, I can take care of the rest.

LMP - Take that back - Or you can just put it in my bag; that's where it's supposed to go.

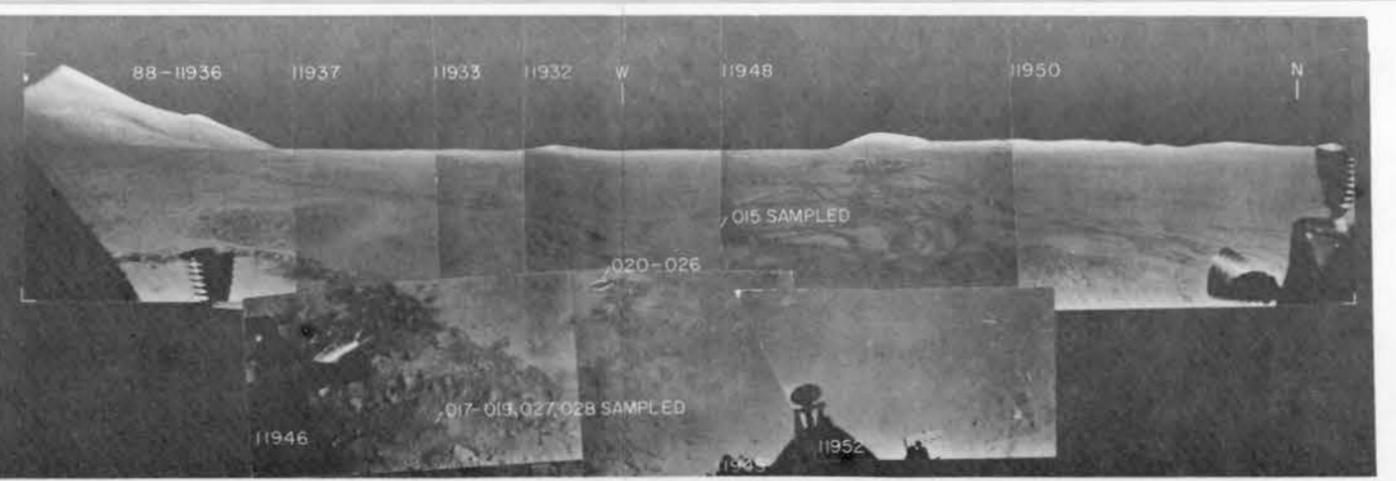
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CROSS-REFERENCE OF LUNAR SAMPLES WITH LOCATIONS, PHOTOGRAPHS, GROUND-ELAPSED TIMES,  
AND THE AIR-TO-GROUND TRANSCRIPT

| SAMPLE<br>NUMBER | SAMPLE<br>WEIGHT, g | SAMPLE TYPE | LOCATION<br>& COMMENTS                             | LUNAR-SURFACE<br>PHOTOGRAPHS | GET<br>DAY:HR:MIN          | CREW COMMENTS<br>RELATING TO SAMPLES   |
|------------------|---------------------|-------------|--|------------------------------|----------------------------|--|
| -----            |                     |             |  |                              |                            |  |
| EVA 3            |                     |             |  |                              |                            |  |
| -----            |                     |             |  |                              |                            |  |
|                  |                     |             | LM closeout  |                              | 06:23:13<br>to<br>06:23:54 | <p>LMP - Hey, I guess we might be able to consolidate the contents of both those bags into one.<br/>- - -<br/>But we can do that inside.<br/>- - -</p> <p>CDR - I put it on the handtool carrier - Give it to you and you can consolidate. I guess those undocumented ones we want to put in the BSLSS bag.</p> <p>LMP - You didn't put any rocks in the BSLSS bag.</p> <p>CDR - No, I didn't, because they're on the floor there. I just never had a chance to get it up to put in there.<br/>- - -</p> <p>LMP - I've got this one large rock in the beast. (15555)</p> |
| -----            |                     |             |  |                              |                            |  |
|                  |                     |             | LM, Post<br>EVA 3<br>Stowage<br>& weight<br>report |                              | 07:00:42                   | <p>LMP - Houston, this is Hadley Base with a weight report for the day.<br/>- - -<br/>Okay, Ed, the BSLSS bag was 25, 25; bag number 7 was 24; and bag number 2 was 23 for a total of 72. (pounds)</p> <p>CC - Okay, we copy. Do you have a bag 8 number?</p> <p>CDR - We do, but we don't - we're not - we don't have any rocks in it.<br/>- - -<br/>And, Ed, we shuffled - we took the contents out of bag 8 and consolidated into bag 7.</p>  |
| -----            |                     |             |  |                              |                            |  |

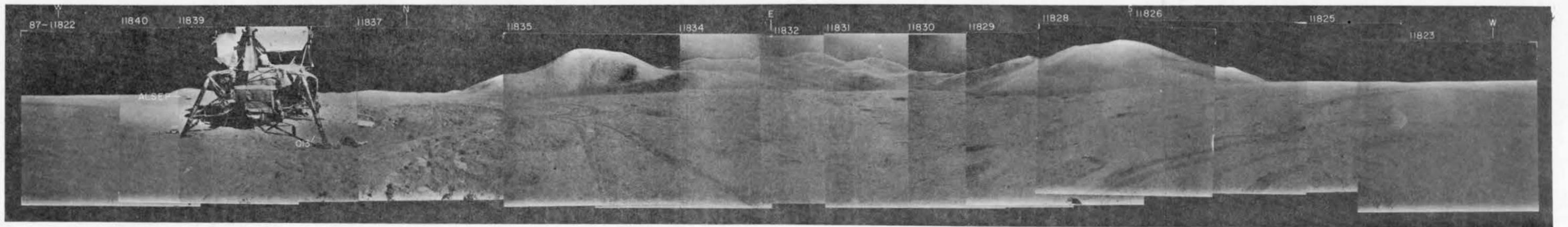
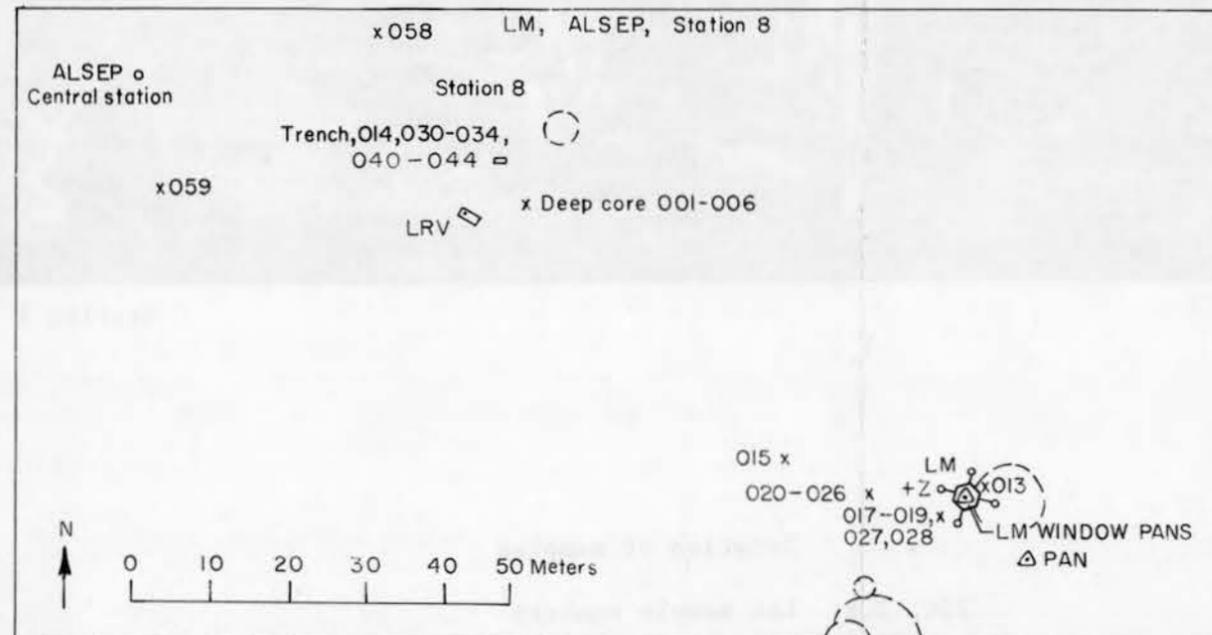


LM Window, pre-EVA I

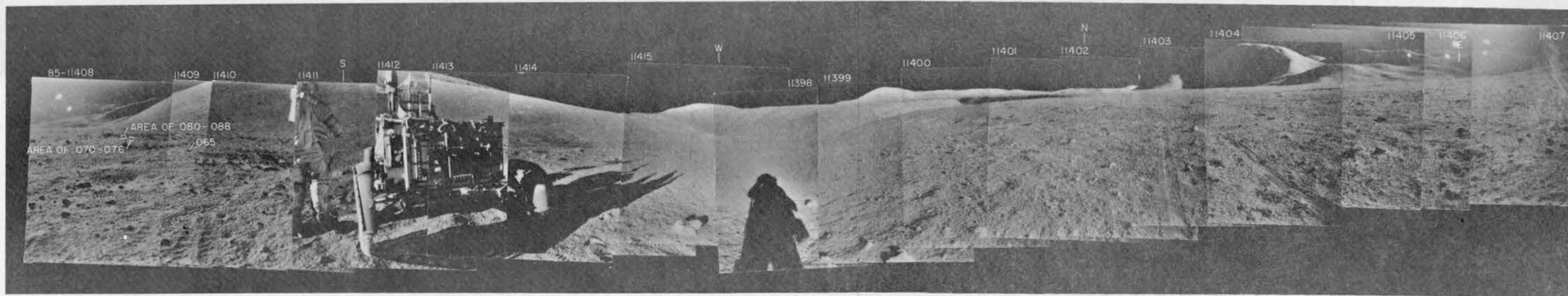


LM Window, post-EVA III

- x location of samples
- 200, 206 LRL sample numbers
- ▢ LRV, dot shows TV camera
- crater rims or other topographic features
- △ panorama station

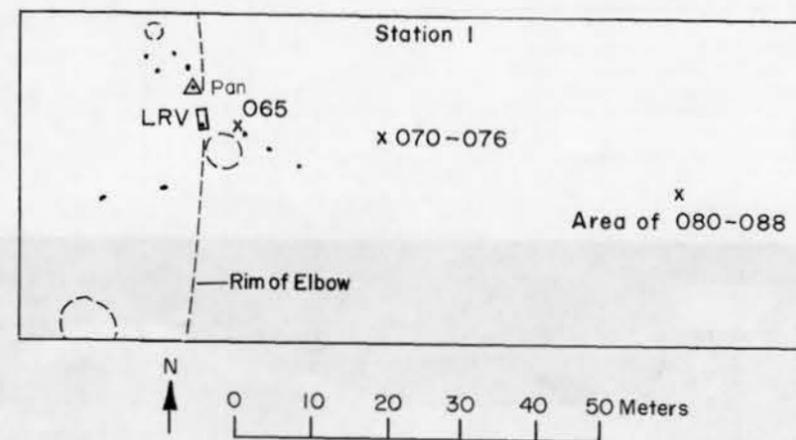


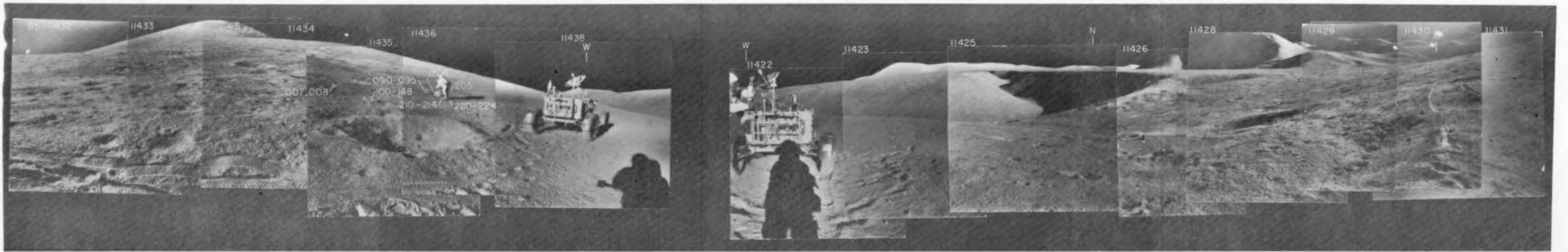
SE of LM



Station 1

- x location of samples
- 200, 206 LRL sample numbers
- ◻ LRV, dot shows TV camera
- crater rims or other topographic features
- ▲ panorama station

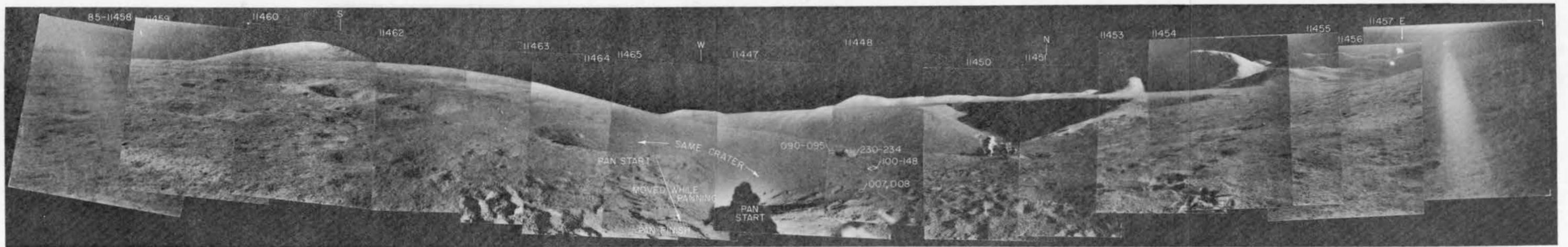
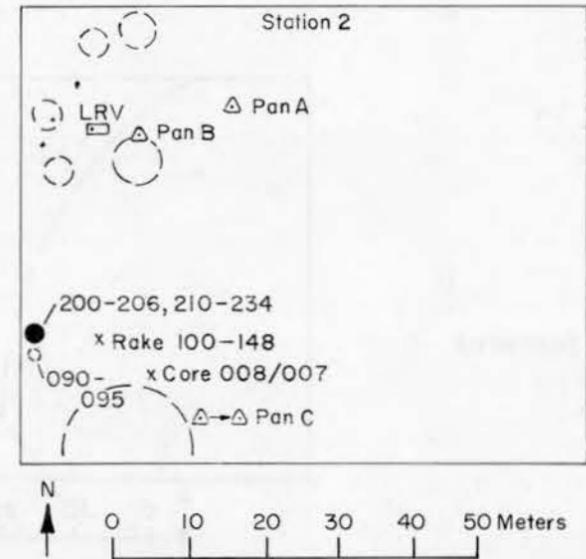




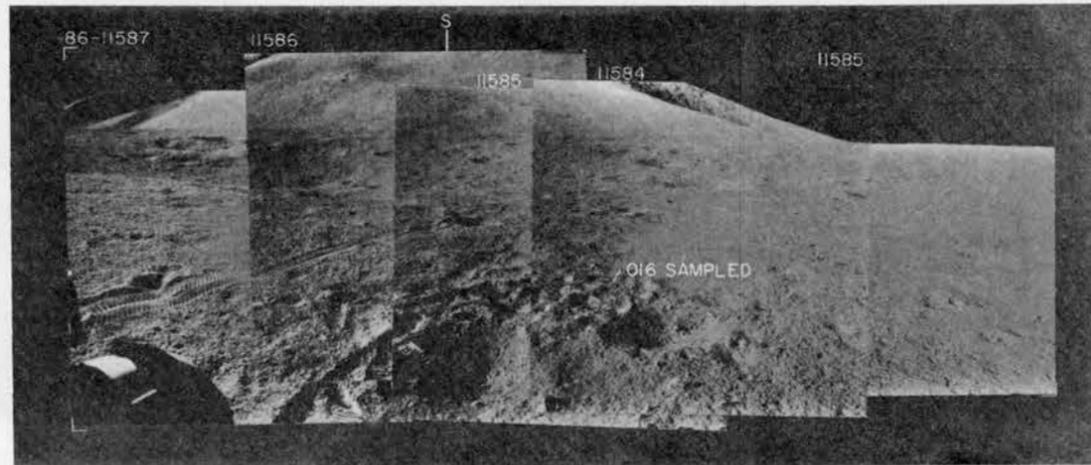
Station 2, pan A

Station 2, pan B

- x location of samples
- 200, 206 LRL sample numbers
- ◻ LRV, dot shows TV camera
- large rocks
- crater rims or other topographic features
- △ panorama station

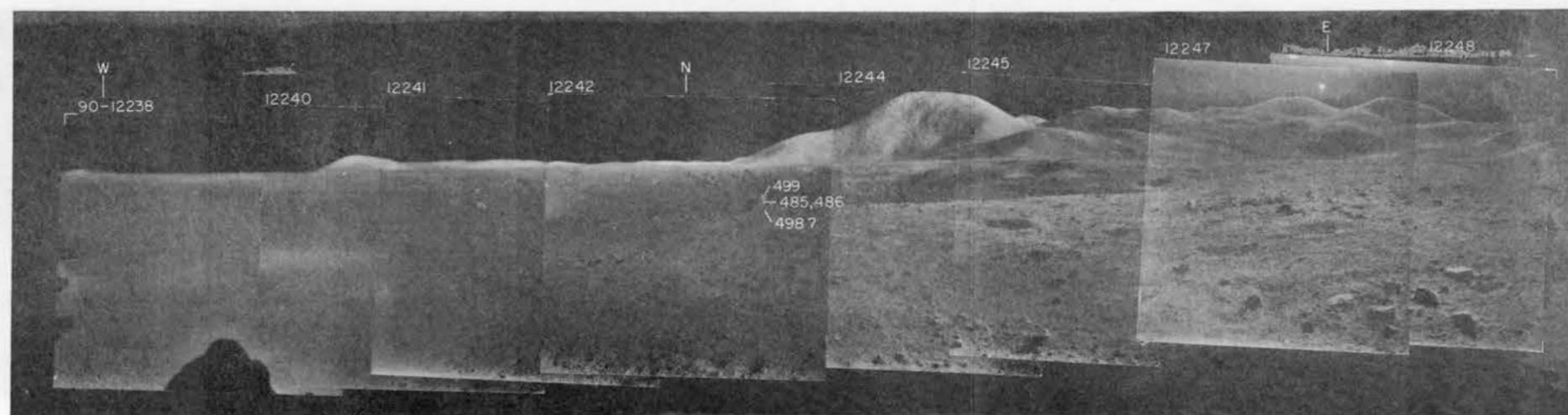
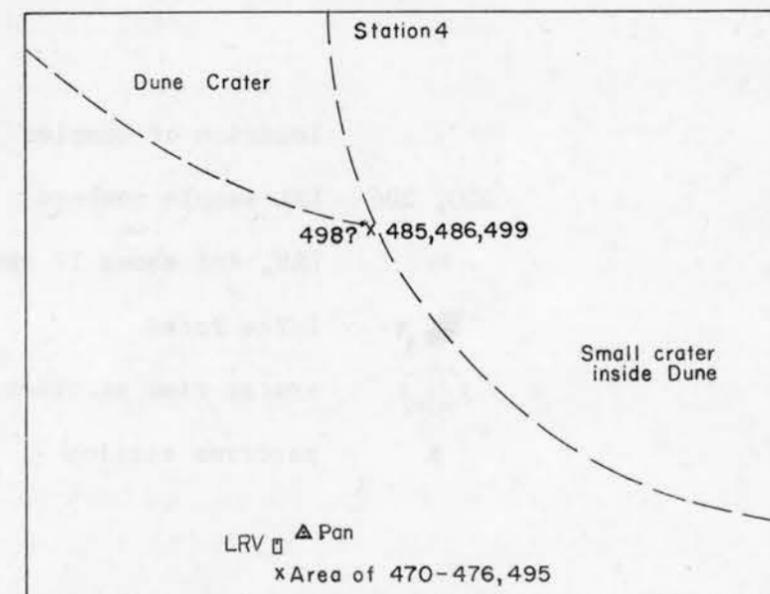
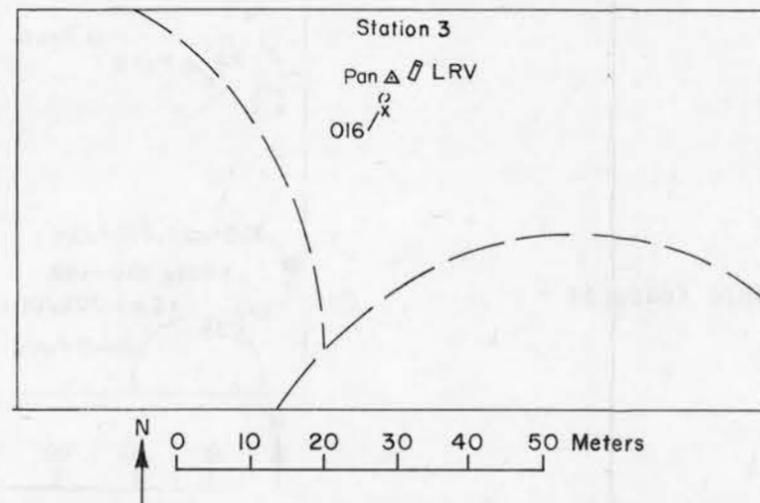


Station 2, pan C

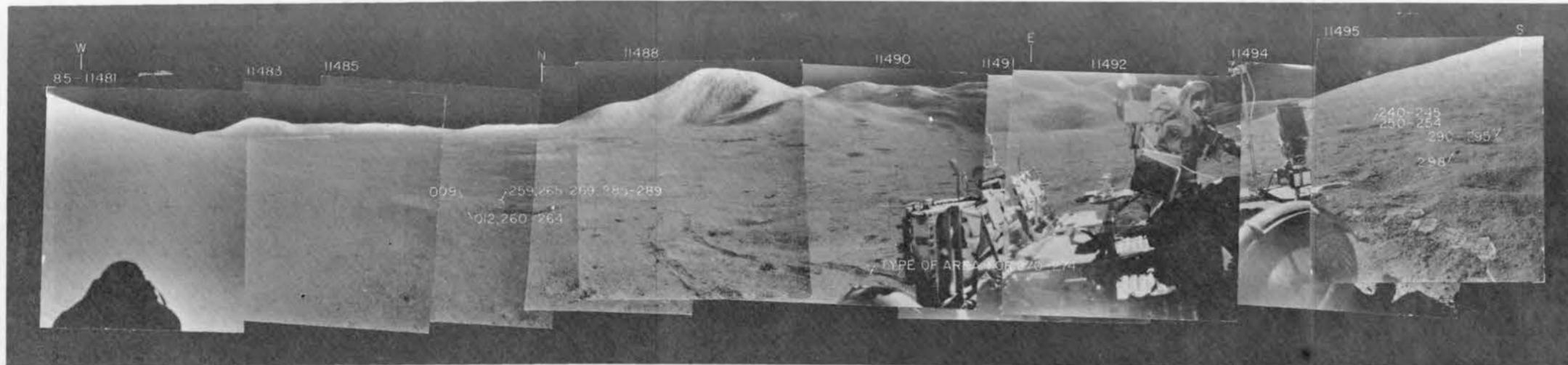


Station 3

- x location of samples
- 200, 206 LRL sample numbers
- ◻ LRV, dot shows TV camera
- ⊖ crater rims or other topographic features
- ▲ panorama station

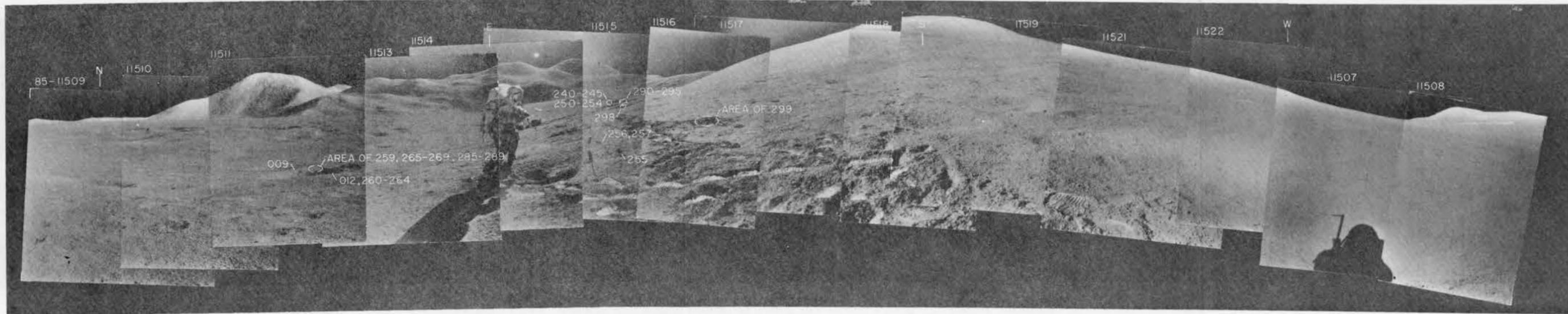
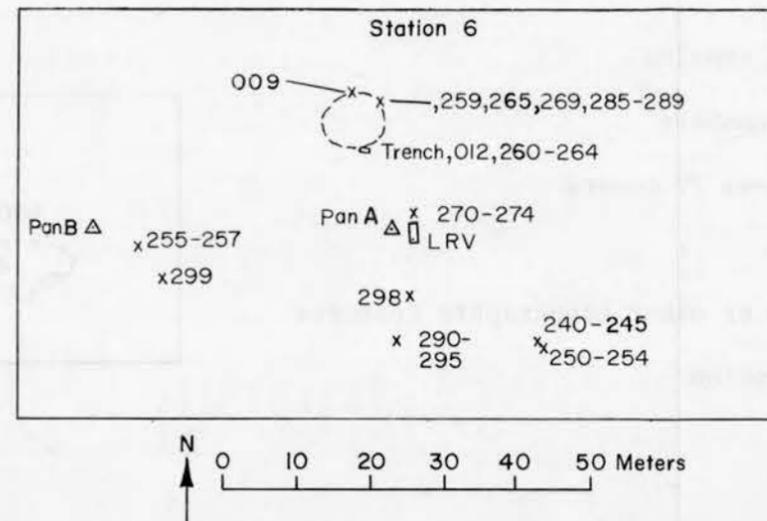


Station 4

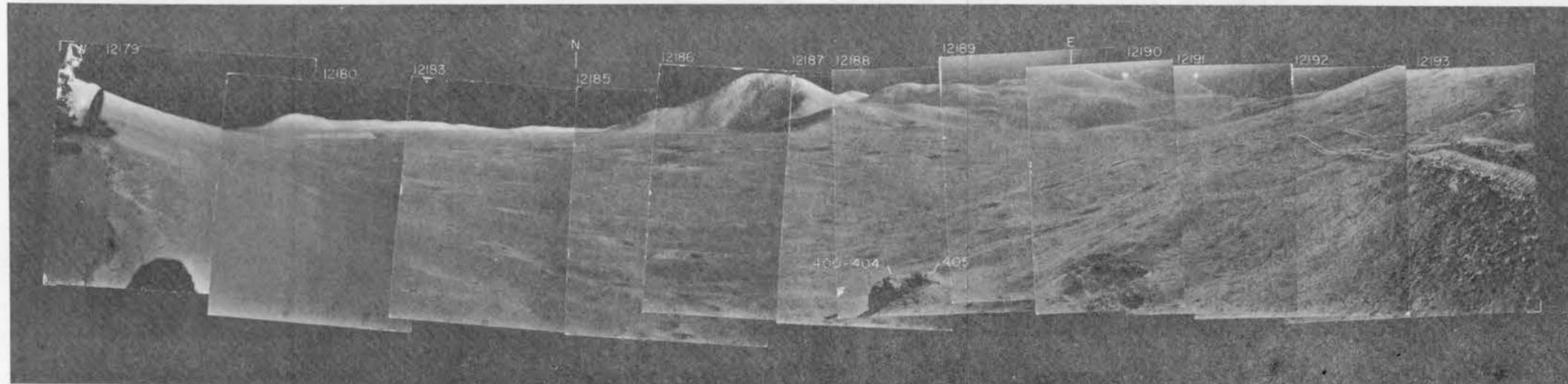


Station 6, pan A

- x location of samples
- 200, 206 LRL sample numbers
- ◻ LRV, dot shows TV camera
- crater rims or other topographic features
- ▲ panorama station

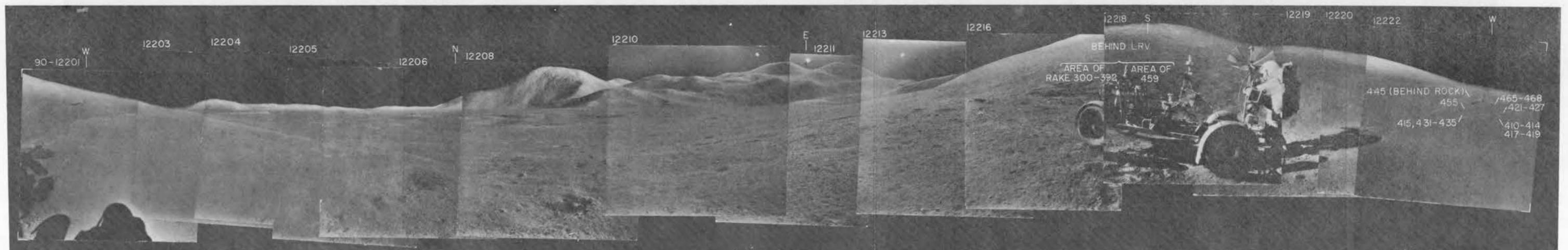
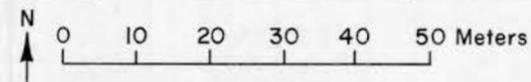
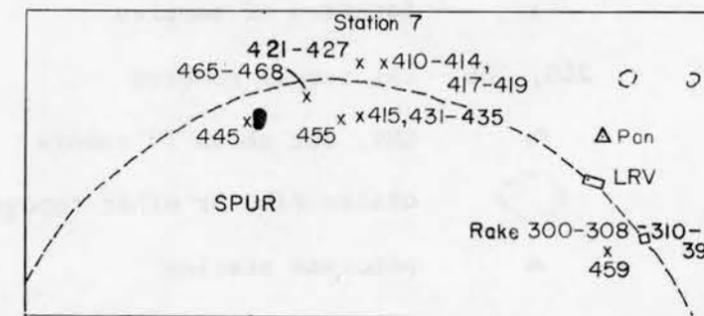
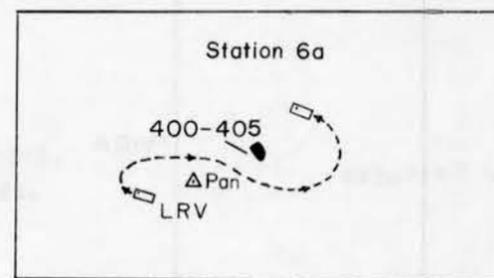


Station 6, pan B

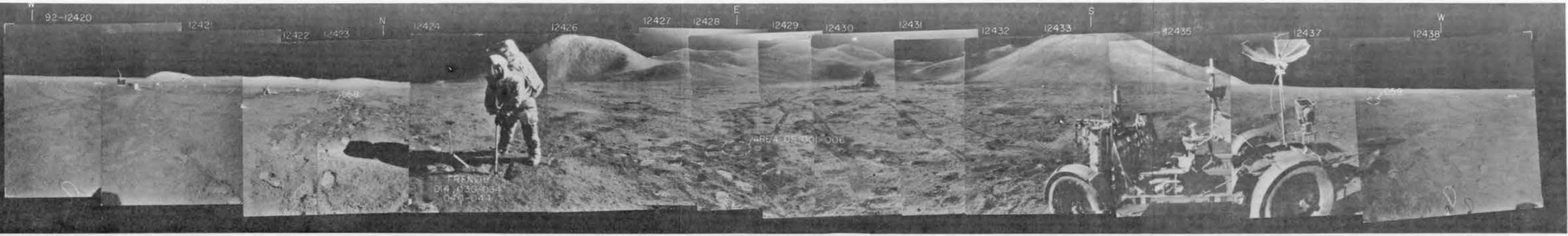


Station 6a

- x location of samples
- 200, 206 LRL sample numbers
- ▭ LRV, dot shows TV camera
- large rocks
- crater rims or other topographic features
- △ panorama station

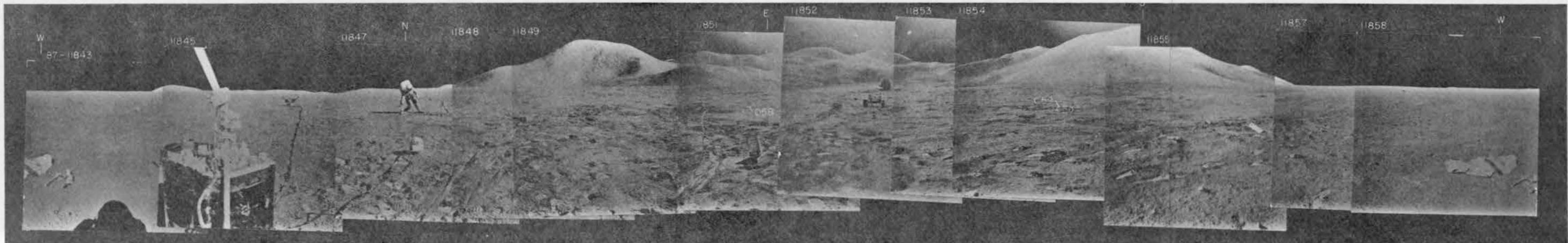
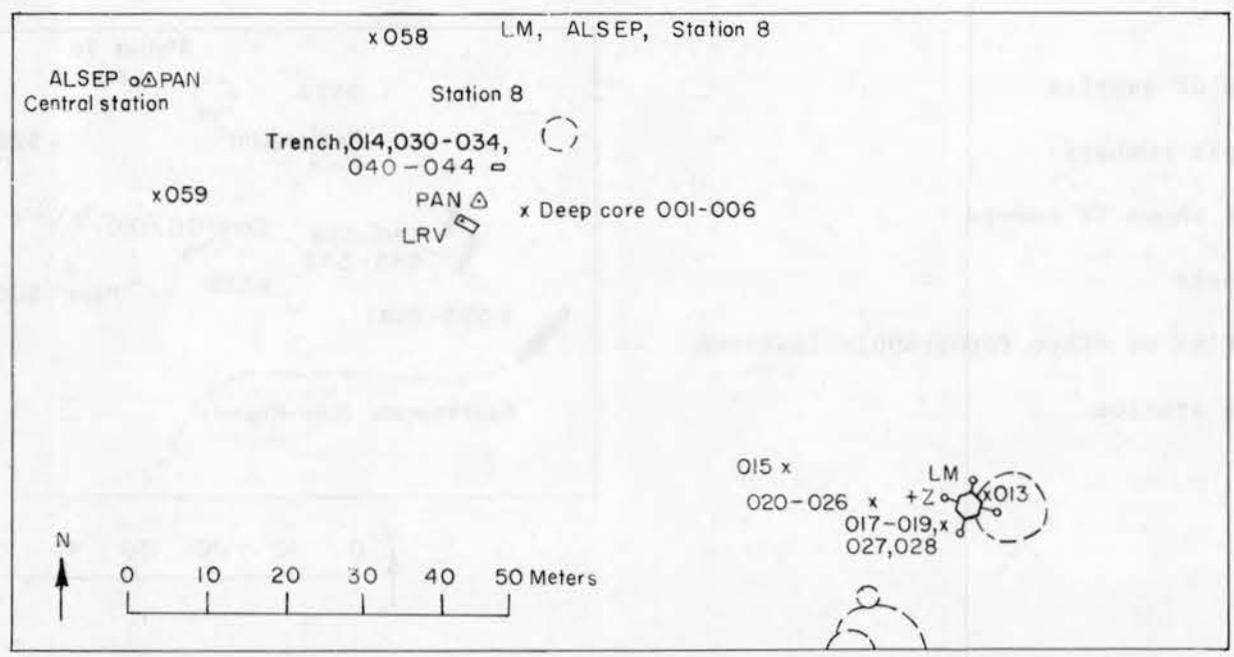


Station 7

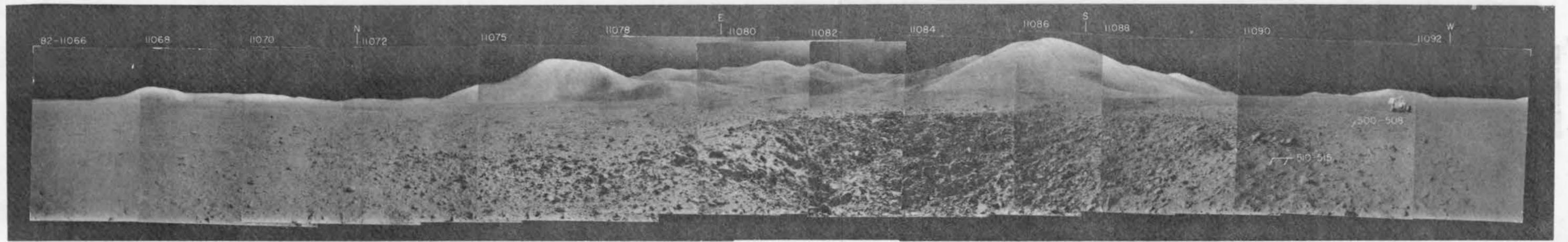


Station 8

- x location of samples
- 200, 206 LRL sample numbers
- ▢ LRV, dot shows TV camera
- crater rims or other topographic features
- △ panorama station

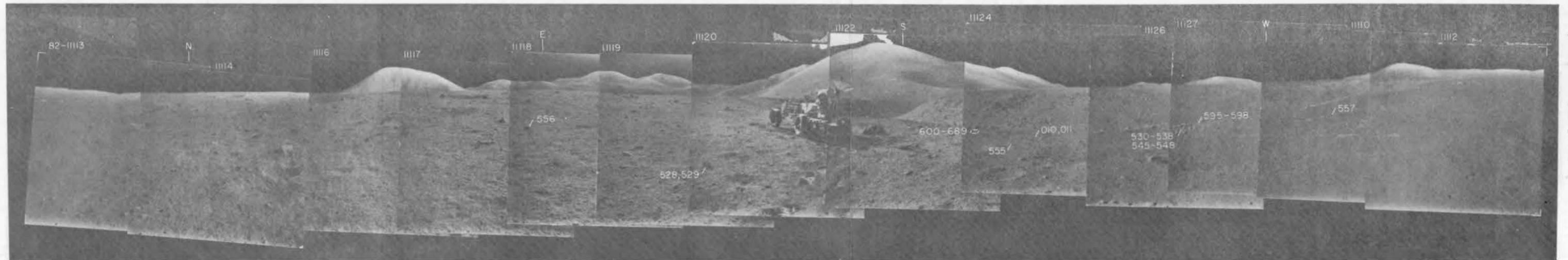
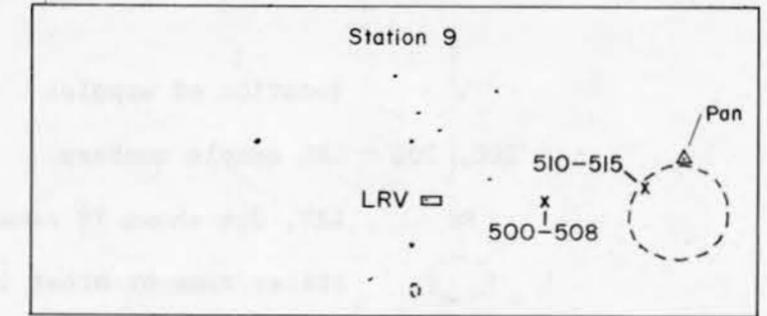
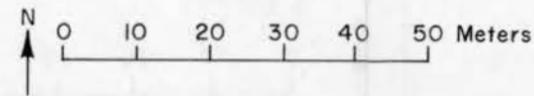
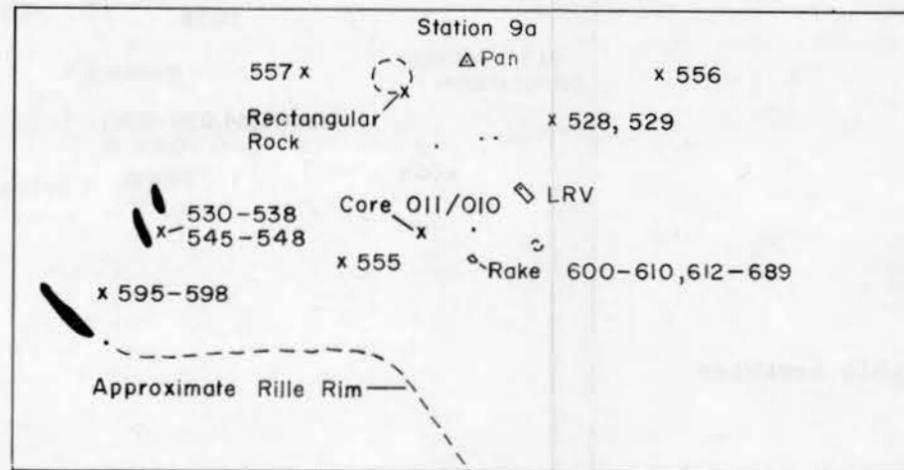


ALSEP



Station 9

- x location of samples
- 200, 206 LRL sample numbers
- LRV, dot shows TV camera
- large rocks
- crater rims or other topographic features
- △ panorama station



Station 9a