TABLE 5.—*Cross-reference of lunar samples with locations, lunar-surface photographs, status of determining sample location and orientation, megascopic sample description, and comments by the astronaut crew during sample collection*—Continued

Sample Number	Weight (g)	Lunar-surface Photographs:[1,2]	Location Status	Orientation[3]	Sample description[4]	Crew comments[5]
EVA 2—Station: H—Continued						
14290–14297					only a few percent are light. The matrix is light gray. Residue from weigh bag 1038; probably material collected with or broken from rock samples collected at Station H, the North Boulder Field.	
14290	23.63				<1 mm fines	
14291	2.12				1–2 mm fines	
14292	3.53				2–4 mm fines	
14293	5.20				4–10 mm fines	
14294	3.43				rock chip	
14295	1.24				rock chip	
14296	2.26				rock chip	
14297	1.73				rock chip	
EVA 2—Station: Unknown						
14309	42.40	No photographs	Unknown	Unknown	A slabby subrounded rock cut by a few irregular fractures. Only a few zap pits are present. One face is irregular and may be a freshly broken surface. The rock is a moderately coherent breccia with a moderate percentage of subrounded dark clasts in a light gray matrix. A few feldspar clasts (up to 3 mm long) are present. (Location unknown: returned in weigh bag 1031 with other grab samples from EVA 2)	
14190–14204		No photographs	Unknown	Unknown	Residue from weigh bag 1031, used on the EVA 2 traverse.	
14190	34.85				<1 mm fines	
14191	5.92				1–2 mm fines	
14192	8.06				2–4 mm fines	
14193	11.15				4–10 mm fines	
14194	4.28				rock chip	
14195	2.77				rock chip	
14196	3.93				rock chip	
14197	1.63				rock chip	
14198	1.63				rock chip	
14199	1.88				rock chip	
14200	1.24				rock chip	
14201	1.56				rock chip	
14202	0.05				rock chip	
14204	21.60				residue, weigh bag 1031	
					residue, weigh bag 1031	

[1]NASA photograph numbers include the magazine and frame numbers, but to save space the normal prefix, AS14–, has been omitted.

[2]The type of photograph refers most commonly to the viewing direction of the photograph with respect to the sun (DS, XS, US; down sun, cross sun, and up sun), and indicating whether the photograph was taken before, during, or after collecting the sample (B, D, A). Some sample documentation is included in individual frames within panoramas. Locator (LOC) photographs are those which show the horizon and some distinctive feature to show the setting of the sample site.

[3]Rock orientation at the time of sampling is considered to be known only if the sample can be recognized in a presampling documentary photograph, from which a reconstruction of the lighting and shadow characteristics can be nearly duplicated using oblique lighting in the laboratory. Surface characteristics such as rounding and pitting, coatings of dust or glass, and fresh fracturing record the exposure history of a fragment at the lunar surface, although these are not reliable indicators to define the exact orientation at the time of collection.

[4]Rocks only are described. Soils, drive tubes, small rock chips, and residues are identified without description. Rock descriptions are by H. G. Wilshire, based primarily on interpretation from LRL mugshot photographs (see also Warner and Duke, 1971).

[5]Excerpts are from the Apollo 14 air-to-ground voice transcription. The sequence of comments is in the order of events during the mission, except where later statements may clarify the documentation of certain samples. Three asterisks (***) indicate omitted dialogue.

Probable origin: Possibly ejected from one of the Triplet craters
Comments: Possibly represents smooth Fra Mauro unit from as deep as 20–25 m. Glass fills one prominent fracture

14312, 14319 (FIGS. 70, 71, 72, 73)

Station: H (Turtle Rock, North Boulder Field)
Location: 80 m NW of LM
Rock type: Coherent clastic breccia

SAMPLE AREA CHARACTERISTICS

Slopes: Flat level regolith surface
Fragment population:
Distribution and size range: Fairly abundant, from limit of resolution to 1.5 m
Color: Medium gray with lighter and darker gray clasts up to 10 cm in size
Shapes: Subangular to subrounded
Fillets: Moderate on smaller fragments on regolith; well-developed on Turtle Rock
Apparent burial: ¼–½
Dust cover: Moderate to heavy
Fines:
Color: Light to medium gray
Compaction: Moderately high
Craters:
Distribution and size range: Abundant from 0.1 to 1.3 m
Shape: Subdued to fresh
Ejecta: Debris associated with 1.3 m crater 1 m north of Turtle Rock and other boulders in area probably ejected from Cone crater

SAMPLE CHARACTERISTICS

Sample 14312
Size: 9×6×4 cm; 299 g
Color: Medium gray with brownish tint
Shape: Blocky, subrounded
Fillet: None
Apparent burial: None
Dust cover: Slight
Comparison with other rocks in area: Appears similar to Turtle Rock and smaller rocks in area

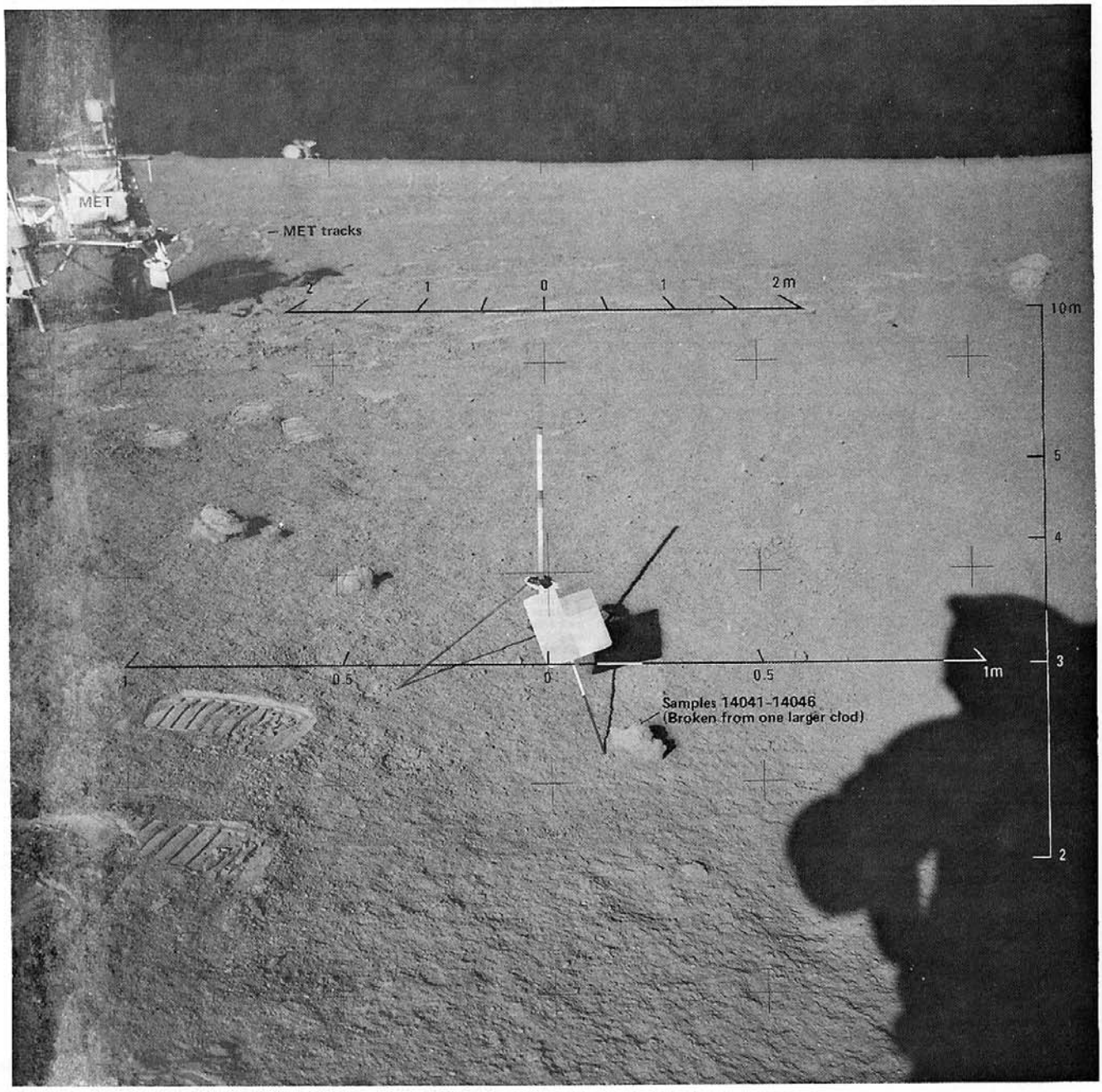

FIGURE 49.—Samples 14041–14046, originally one unbroken, poorly consolidated breccia clod at station A. The clod broke up during collection. Location photograph looking west showing the LM on the horizon. (NASA photograph AS14–68–9409.)

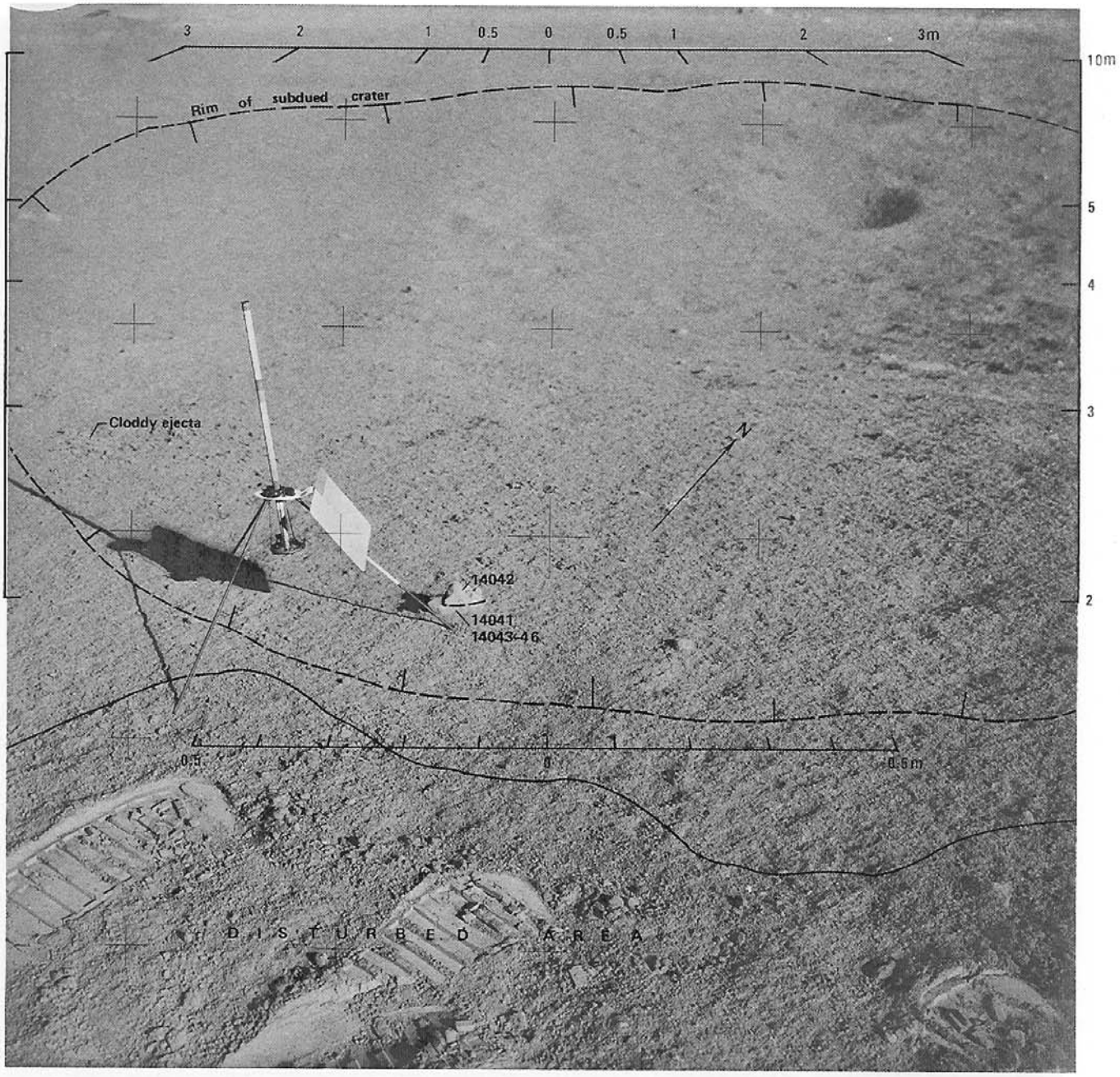

FIGURE 50.—Samples 14041–14046 in their reconstructed approximate position in the poorly consolidated breccia clod from which they broke during collection. Photograph taken before sampling; view northwest, oblique to sun. (NASA photograph AS14-68-9411.)

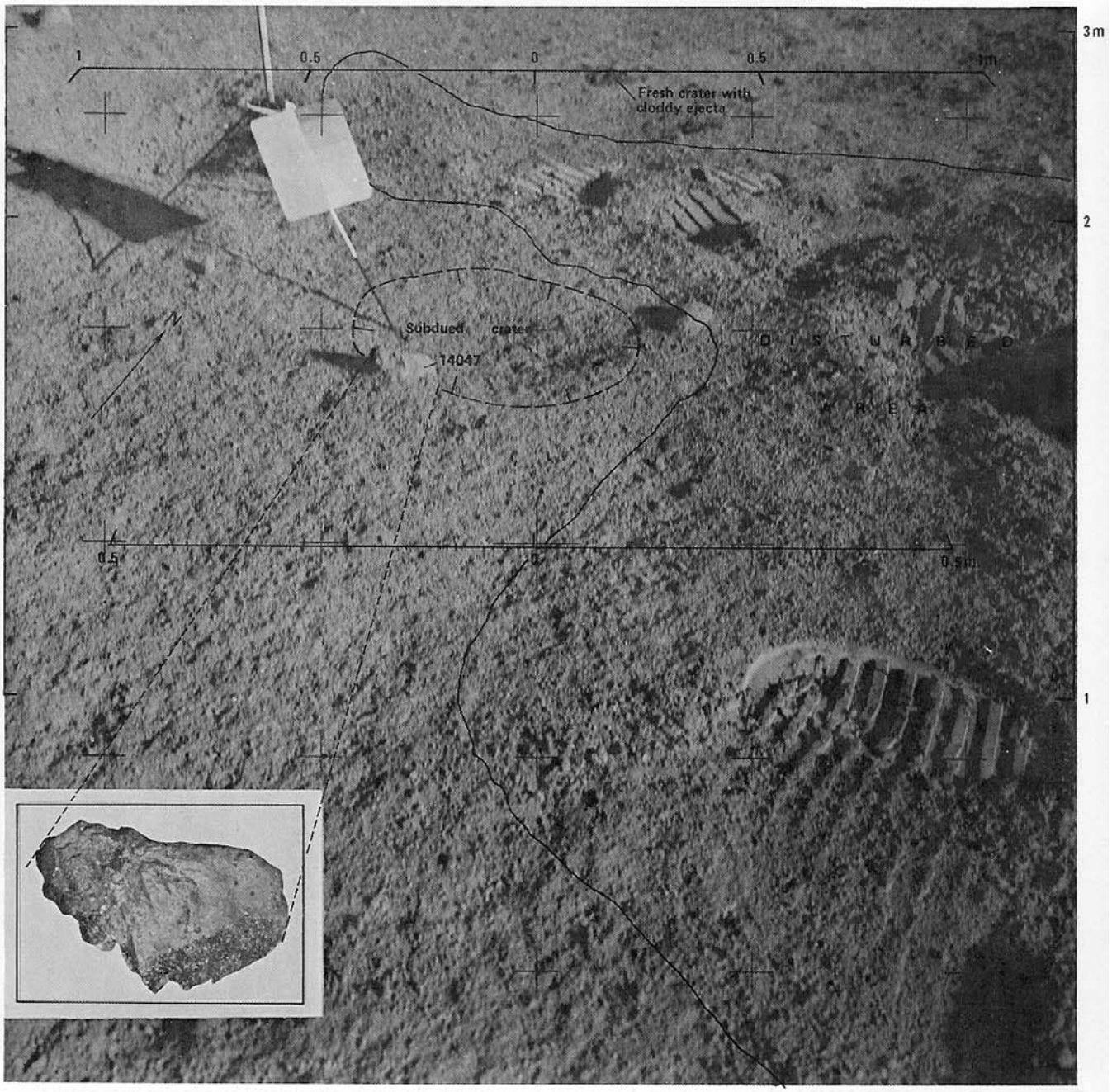

FIGURE 51.—Sample 14047 and vicinity before sampling. View northwest. (NASA photograph AS14–64–9073.) Inset shows approximate lunar orientation using LRL photograph S–71–20769.

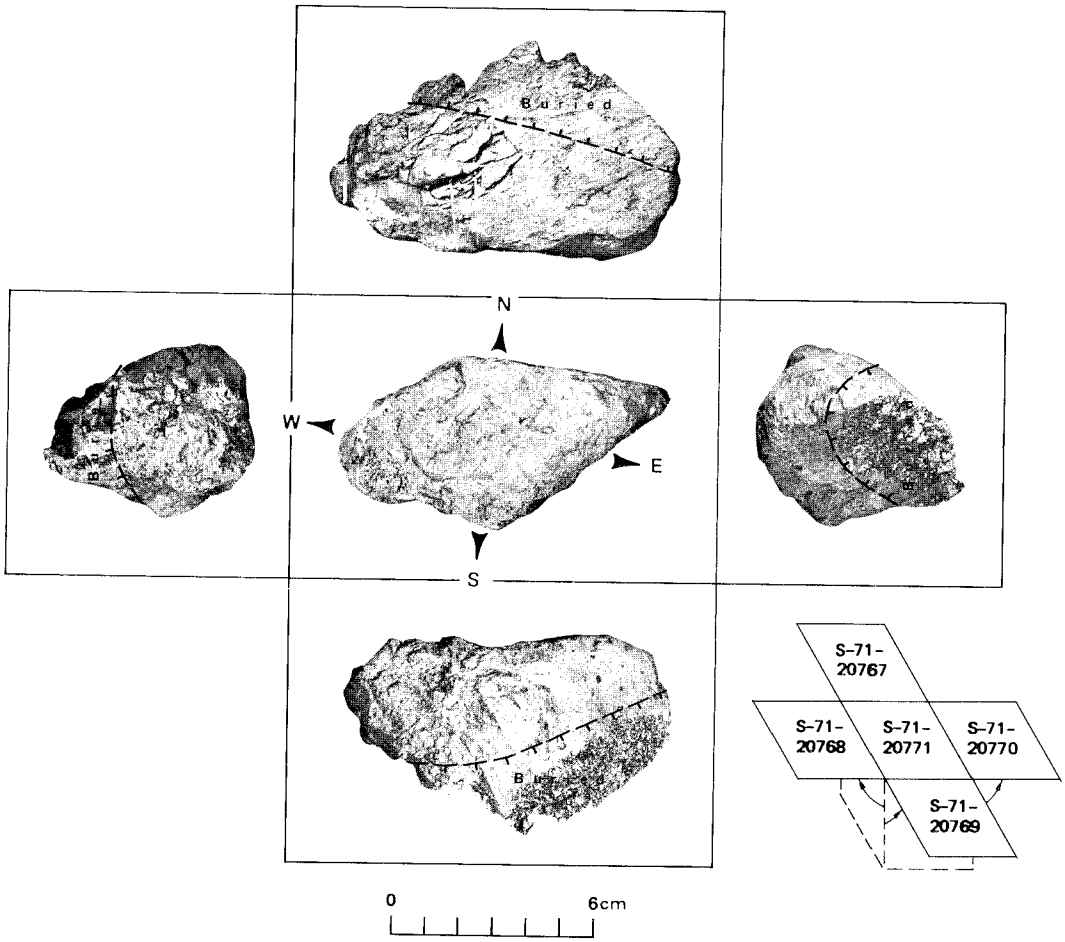

FIGURE 52.—Orthogonal views of sample 14047, shown in approximate lunar orientation. NASA photograph numbers are shown in the schematic diagram. The glass-covered surface of the rock was buried at the time of sample collection.

Probable origin: Ejected from Cone crater
Comments: Zap pits on all sides indicate that if spalled from Turtle Rock, 14312 was turned over later or else fell onto Turtle Rock from elsewhere

TABLE 6.—*Usage of film on the lunar surface during the Apollo 14 mission*

EVA	Mag	Film	Frames	EVA total
pre-EVA	KK	BW	14	14
1	II	Color	88	121
1	JJ	Color	33	
1–2	II	Color	16	16
2	LL	BW	156	255
2	MM	BW	99	
post-EVA	II	Color	11	11
Total color			148	
Total black and white			269	
Total			417	

Sample 14319
Size: 8×5.5×3.9 cm; 211.6 g
Color: Light medium gray on fresh surface
Shape: Rounded on all but one side which is flat
Fillet: None
Apparent burial: None
Dust cover: Slight
Comparison with other rocks in area: Appears similar to Turtle Rock and other fragments in area
Probable origin: Cone crater; may be spalled from Turtle Rock by impact; vein glass on flat underside may be same as resistant ledge under sample (Fig. 71)

14314, AND UNIDENTIFIED SAMPLE (FIGS. 70, 71)

Station: H (Turtle Rock, North Boulder Field)
Location: 80 m NW of LM
Rock type: Coherent clastic breccia

SAMPLE AREA CHARACTERISTICS

(Turtle Rock fillet)
Slopes: 2–3° SE-sloping fillet on flat regolith
Fragment population: (on fillet)

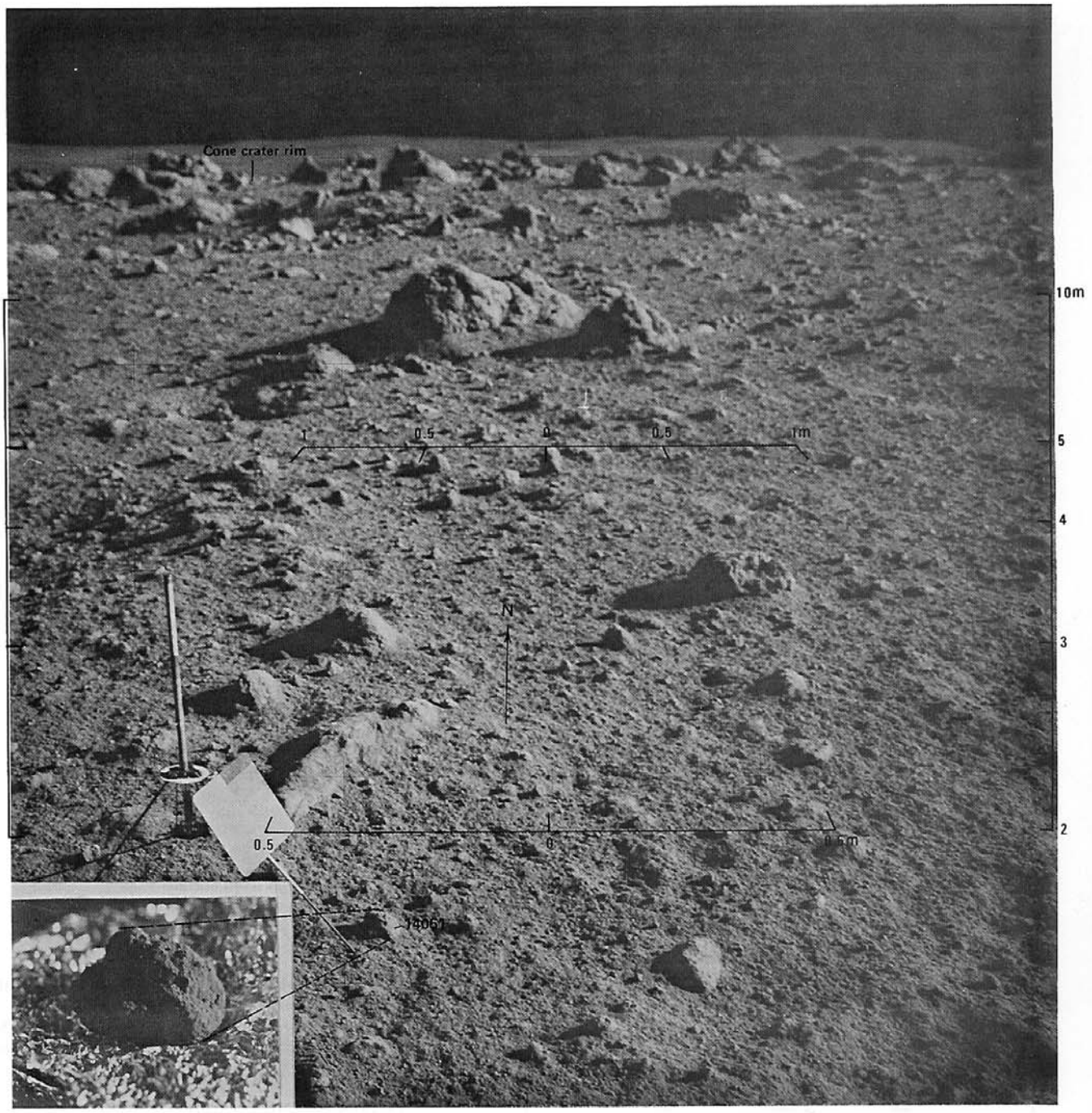

FIGURE 53.—Sample 14051 and vicinity. View north toward the blocky rim of Cone crater from station C′. (NASA photograph AS14–68–9444.) Inset shows approximate lunar orientation reconstructed in the LRL using oblique lighting.

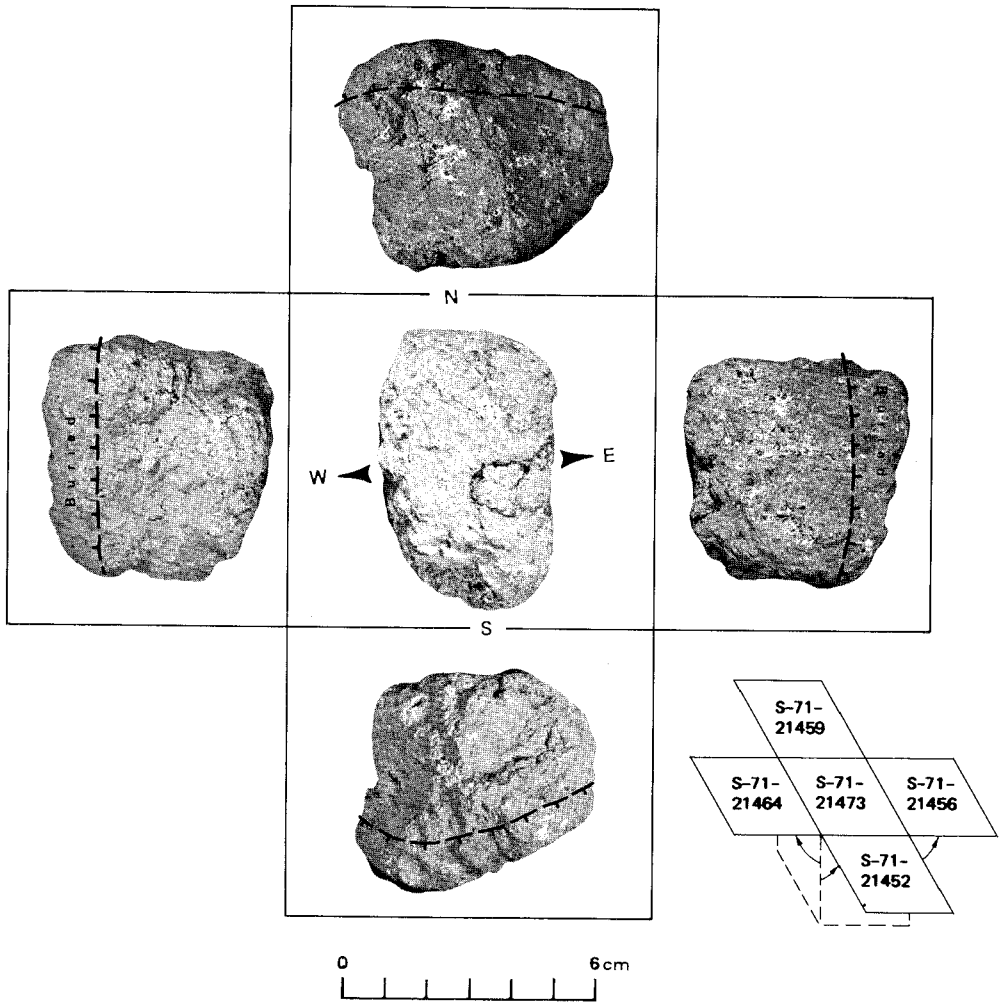

FIGURE 54.—Orthogonal views of sample 14051, shown in approximate lunar orientation. NASA photograph numbers are shown in the schematic diagram.

Distribution and size range: Abundant from limit of resolution to 30 cm
Color: Light medium gray with lighter and darker clasts
Shapes: Subrounded; irregular
Fillets: Poorly to moderately developed
Apparent burial: ¼–¾
Dust cover: Moderately high

Fines: (on fillet)
Color: Light to medium gray
Compaction: Moderately firm

Craters: (on fillet)
Distribution and size range: Very few, mostly less than 5 cm
Shape: Not discernible
Ejecta: Not discernible

SAMPLE CHARACTERISTICS

Sample 14314
Size: 7×5×3 cm; 115.7 g
Color: Fresh surface; medium to light gray; pitted surface, dark brownish gray
Shape: Irregular, slabby, rounded; fractured
Fillet: Moderately well developed
Apparent burial: ¼–⅓
Dust cover: Moderately heavy
Comparison with other rocks in area: Appears similar
Probable origin: Cone crater
Comments: May represent upper stratigraphic layer in Fra Mauro formation from the ridge impacted by the cone crater event. Unidentified sample which also may be from Turtle Rock probably 14316, 14317, or 14320

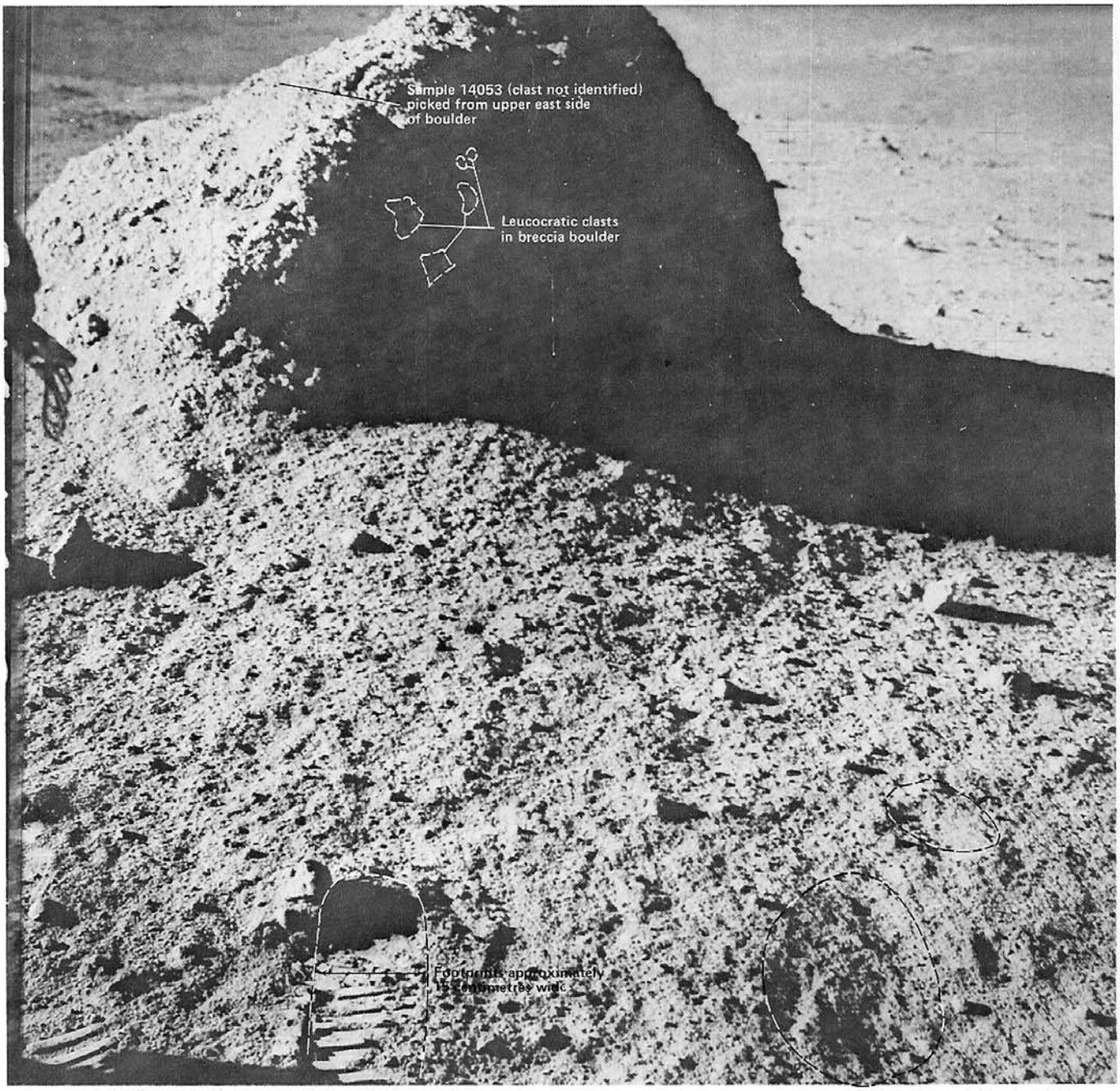

FIGURE 55.—Boulder at traverse station C2 from which sample 14053 was collected. The sample was reported to have been collected from the sunlit part of the boulder, approximately halfway up from the base. Note the light-colored clasts in the shadowed part of the boulder. Sample 14053, a crystalline rock, is thought to be a clast from this fragmental rock. The sample has not been recognized in this presampling photograph (NASA photograph AS14–64–9133.)

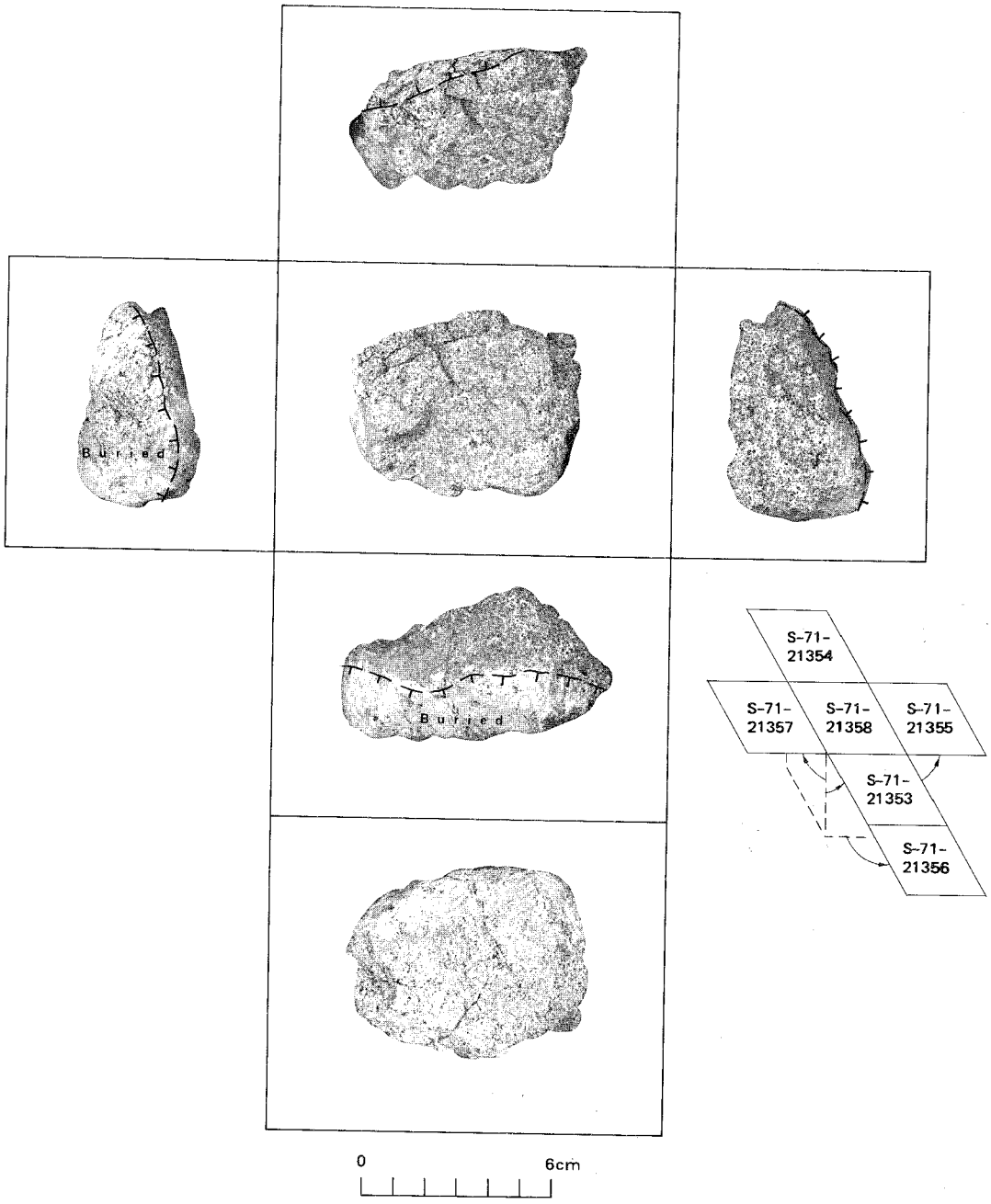

FIGURE 56.—Orthogonal views of sample 14053. The lunar orientation of the rock is not known, but weathered and unweathered parts of the rock suggest a burial line. NASA photograph numbers are shown in the schematic diagram.

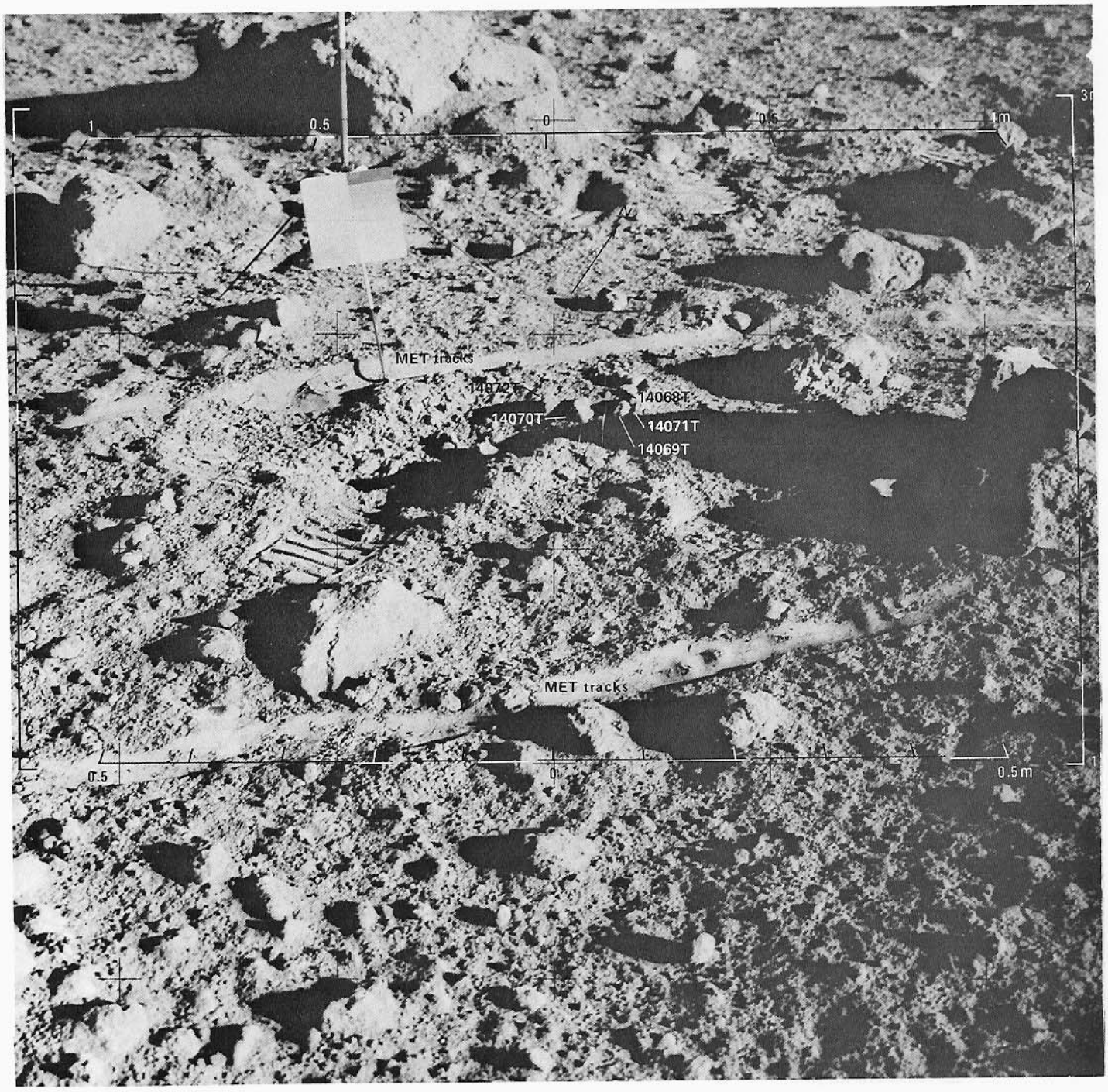

FIGURE 57.—Samples 14068–14072, small crystalline rocks collected from the blocky ejecta of Cone crater at station C′. View north. (NASA photograph AS14–64–9125.)