

APOLLO 17 COARSE FINES (4-10 mm)  
SAMPLE LOCATION, CLASSIFICATION, AND  
PHOTO INDEX



*National Aeronautics and Space Administration*  
**LYNDON B. JOHNSON SPACE CENTER**

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By  
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June 1973

## INTRODUCTION

This report summarizes the range and proportions of rock types observed during a binocular microscope examination of the Apollo 17 4-10 mm coarse fines. As the examination was made through the window of the nitrogen lines at the Johnson Space Center, without the aid of thin sections or analyses of any kind, all classifications are strictly tentative. The purpose of the report is to provide lunar investigators with information on which they may select and seek allocation of particles from this size range for detailed study.

This collection of small particles from Apollo 17 is especially valuable because each individual particle is large enough for several studies (i.e., age, chemistry, and mineralogy) and because they were collected in such a way as to be unbiased by selection. Not all the 4-10 mm particles from Apollo 17 are included in this edition of this catalog. Only part of each soil sample was sieved and soils that were less than 50 grams total were not sieved at all. In addition, samples 70324, 72164, 73134, 75124, 76284, and 78464 were unavailable for description at the time this edition was printed. They are briefly described in the Apollo 17 Catalog (1). The particles that were picked out of core tubes are described elsewhere.

The systematic numbering of lunar samples used in the Apollo 17 Catalog should help the readers understand the location and scientific objective of each of these samples (1). The section of this report on sample locations was derived from the USGS Interagency Reports 69, 71, and 72 (2).

For the purpose of macroscopic examination, the particles in this catalog were dusted off individually by holding them with forceps in a jet of N<sub>2</sub>. After dusting, the particles were separated into categories on the basis of their lithologic character as viewed through a binocular microscope. After separation into categories each group of particles was described and photographed. All of the sample descriptions and photographs are included in this catalog. The color photographs are worth a thousand words of description. The Curator's Office, JSC, maintains a file of these photos which can and should be examined before scientific investigation is planned.

### References:

- (1) Apollo 17 Lunar Sample Information Catalog, MSC 03211.
- (2) U.S. Geological Survey Interagency Report (69, 71, 72).

## Acknowledgements

I would like to thank Ursula Marvin and Jean and Stuart Agrell for their help in describing some of the samples. Robert Sutton kindly reviewed the section on sample location. The excellent photography was performed by Victor Alexander and Al Locke. Jack Warren was especially helpful in sample preparation. A large number of other staff members in the Lunar Receiving Laboratory were helpful in many ways. Finally, I also want to thank Dianne Robinson who typed and assembled this report.

Table I is a summary of the findings of this report. Stations 2, 3, and 6 contained many feldspathic fragments and Station 0, 1, 4, 5 and 9 contained many mare basalt fragments. The plagioclase rich fragments were almost always of the brecciated variety.

The following terms were used frequently:

Agglutinates - Agglutinates are delicate, glassy objects that often serve to bind a wide variety of individual mineral fragments, soil clods and brecciated material together. Generally, a smooth black glass makes up as much as 50 percent of the particles. The glass is usually vesicular.

Soil Breccia - Soil breccias are weakly lithified and very friable clods of soil. They are always well rounded, but they have survived the sieving and dusting and can usually be picked up by tweezers. They are about 90 percent gray aphanitic material and about 10 percent individual glass and mineral clasts.

Glass - Many of the soil breccias and some of the other lithic particles are coated by black glass which has apparently been splashed onto them. In addition, there are a few glass particles. They are all black and often vesicular; sometimes they are devitrified.

Mare Basalt - The floor of the Taurus-Littrow valley is apparently flooded by a mare basalt material similar to the rocks from Apollo 11. Fragments of this material range in grain size from about 2 mm down to aphanitic. They contain up to 20 percent opaques (probably ilmenite), 50 percent brown clinopyroxene, and 30 percent plagioclase. Some particles have up to a few percent of olivine - generally of a slightly larger grain size. These fragments are usually vuggy and vesicular. The vugs (up to 20 percent) are usually lined with euhedral crystals of the matrix minerals and the vesicles (up to 5 percent) usually have drussy white linings.

Aphanitic Basalt - The mare basalt fragments, range in grain size down to aphanitic. The aphanitic variety is usually dense and black and may have more ilmenite than the more coarse grained equivalents. Sometimes phenocrysts of olivine are present. A few particles in this category may be fine-grained breccia.

Breccia - The fragments called breccia in this report are equivalent to the "microbreccia" material described in the main sample catalog. They are rich in mafic minerals and probably derived from the mare basalt material. The presence of a few percent of plagioclase-rich material in the clasts of these breccias indicate the addition of highland material.

Feldspathic Breccia - The light colored breccia particles in this collection are termed feldspathic breccia if they contain over 60 percent plagioclase and if they are not of an annealed appearance. Much of the plagioclase in these particles is chalky white and probably highly shocked. The mineral assemblage of these light colored breccias also includes a gray mineral (probably orthopyroxene) and a few percent opaque mineral. Sometimes a light colored glass is associated with these particles.

"Anorthositic" Breccia - The transition from feldspathic breccia is gradational. Many of the plagioclase rich breccias have an annealed or recrystallized texture and are termed anorthositic breccia in this report. These light colored particles have a dense or coherent metaclastic texture and are made up predominantly of plagioclase and probably a good deal of orthopyroxene. Most of these particles are aphanitic.

Feldspathic Basalt - There are a number of plagioclase rich particles (especially from station 6) that I thought may have a fine-grained igneous texture. Such particles are important because there are no reported equivalent to this category in the rake samples or large rocks. However, it is possible that these particles may instead be of a highly metamorphosed origin. The major mineral was plagioclase (60-80 percent) and a gray material - probably orthopyroxene. The grain boundaries appeared distinct, especially those of the opaques which made up a few percent of the assemblage.

Anorthosite-Norite-Troctolite - A few plagioclase rich particles had a slightly larger grain size (2-4 mm) and were included in these categories. One particle had several percent pink spinel and some had olivine or orthopyroxene. However, it was disappointing not to find more particles that belong in these categories.

Sample #	Glass	Soil Breccia	Agglutinate	Mare Basalt	Aphanatic Basalt	Dark Breccia	Breccia	Feldspathic Breccia	Anorthositic Breccia	Feldspathic Basalt	Anorthosite Norite	Location
70064				3				1	1			Jack Schmitt's Pockett
70164		1	2	4				1				ALSEP site
70184				3			2					Deep core site
70274			1	5	2	1						SEP site
70314		1	2	6	3							LRV-12
70324				10			3					LRV-12
71044	3	1		21	6				1			St. 1a 1-2 cm
71064	1			77	17	4			1			St. 1a 5-6 cm
71134		2		1	1							St. 1a
71154				7	1	1						St. 1a
71504	4	7		27	1	8			2			St. 1a Near Rake Sample
72134			2	27	17	13						LRV-1
72144	2	2	2	1		2			1			LRV-2
72224								28	3	1		St. 2
72244			2					11	13			St. 2
72264			4				3	14	3			St. 2
72324			1				1		2			St. 2
72434								1	7			St. 2
72444		5	5	1				9		2		St. 2 Trench 0-4 cm
72464							1	3			3	St. 2 Skim
72504		2	2				14	20				St. 2 Near Rake Sample
72704				1		3		10	3		3	Near Nansen Rake Sample
72164							5					LRV-3

Sample #	Glass	Soil Breccia	Agglutinate	Mare Basalt	Aphanatic Basalt	Dark Breccia	Breccia	Feldspathic Breccia	Anorthositic Breccia	Feldspathic Basalt	Anorthosite Norite	Location
73124	1		2									St. 2a Skim
73134			-"Lithic fragments"-									St. 2a
73144	1						1	18	2		5	St. 2a Trench 15 cm
73154							1	1			1	St. 2a
73214	1						1	7			2	St. 3
73224							1	5			1	St. 3
73244	3	24	1	5	1	1	10	25	2		3	St. 3 Trench 0-5 cm
73264			3	2				12	8			St. 3 Trench 5-10 cm
73284				1			2	12	10			St. 3 Trench 5-10 cm
74114		20					10					LRV-5
74124						1				2		LRV-6
74244	5	13		21	25	5	1					St. 4 Trench
75064				33	1							St. 5
75084			8	43	13	15			2			St. 5
75114				11	7	10						LRV-7
75124			-"Basalt fragments"-									LRV-8
76034	2	2		2							6	St. 6
76124		18							1			LRV-9
76134				2		3					8	LRV-10 Turning Point Rock
76224		6	4				1	5	2	5		St. 6
76244				1						4		St. 6



Sample #	Class	Soil Breccia	Agglutinate	Mare Basalt	Aphanatic Basalt	Dark Breccia	Breccia	Feldspathic Breccia	Anorthositic Breccia	Feldspathic Basalt	Anorthosite Norite	Location
76264		13		4				4	12	7		St. 6
76284					-"see description"-							St. 6
76324	1	2		2	3			33	9	11	2	St. 6
76504		18	9	7		6	1	13			8	St. 6 Near Rake Sample
77514						1		2				St. 7
77534				6		2		7			2	St. 7
78124		11	3	1								LRV-11
78224		4	5	2								St. 8
78234								2			2	St. 8
78424						6					2	St. 8 Trench 15-25 cm
78444		2	1	1				1				St. 8 Trench 6-15 cm
78464	2					6						St. 8 Trench 1-6 cm
78484						1		1				St. 8 Skim 0-1 cm
78504	4	14	4	18	20	5	12	3	4			St. 8 Near Rake Sample
79124	5			1		50				1		St. 9
79224	5	4		14		5						St. 9 Trench 0-2 cm
79244	1	18		5	5	2		3			4	St. 9 Trench 2-7 cm
79264	7	6		11	14		5		8		1	St. 9 Trench 7-17 cm
79514	1	2		3		2	2				1	St. 9

The landing site for Apollo 17 was located near the center of Taurus-Littrow Valley (Figure 1). In this area fine-grained mare basalts are overlain by a regolith that may contain dark mantling material. The valley floor is smooth and only gently rolling. Loose surface rocks range in size up to a maximum of 4 m in the ALSEP area. The craters in the landing area are subdued and most of the observable surface blocks may be ejecta from Camelot (600 m diameter and approximately 1 crater diameter to the west). The crew did not recognize a layer of dark mantle that was distinct from the regolith. The dark mantle unit can be seen in premission photographs and one of the objectives of the mission was to sample it. Possibly gardening of dark mantle and normal regolith may have destroyed original dark mantle depositional characteristics.

Sample 70164 is from a fillet of a 1.5 m boulder near the ALSEP site. Sample 70184 is from a typical soil collected about 3 m from the deep core site and included a large basalt fragment. 70274 was collected at the SEP site 180 m from the LM at azimuth 073° and it also included a basalt fragment. 70314 and 70324 were collected at the end of EVA-3 (LRV-12) near Sherlock crater about 1 km to the east of the LM. 70054 is from the residue of the BSLSS which also included several large rocks. 70064 (bag 15E) is from Jack Schmitt's pocket.

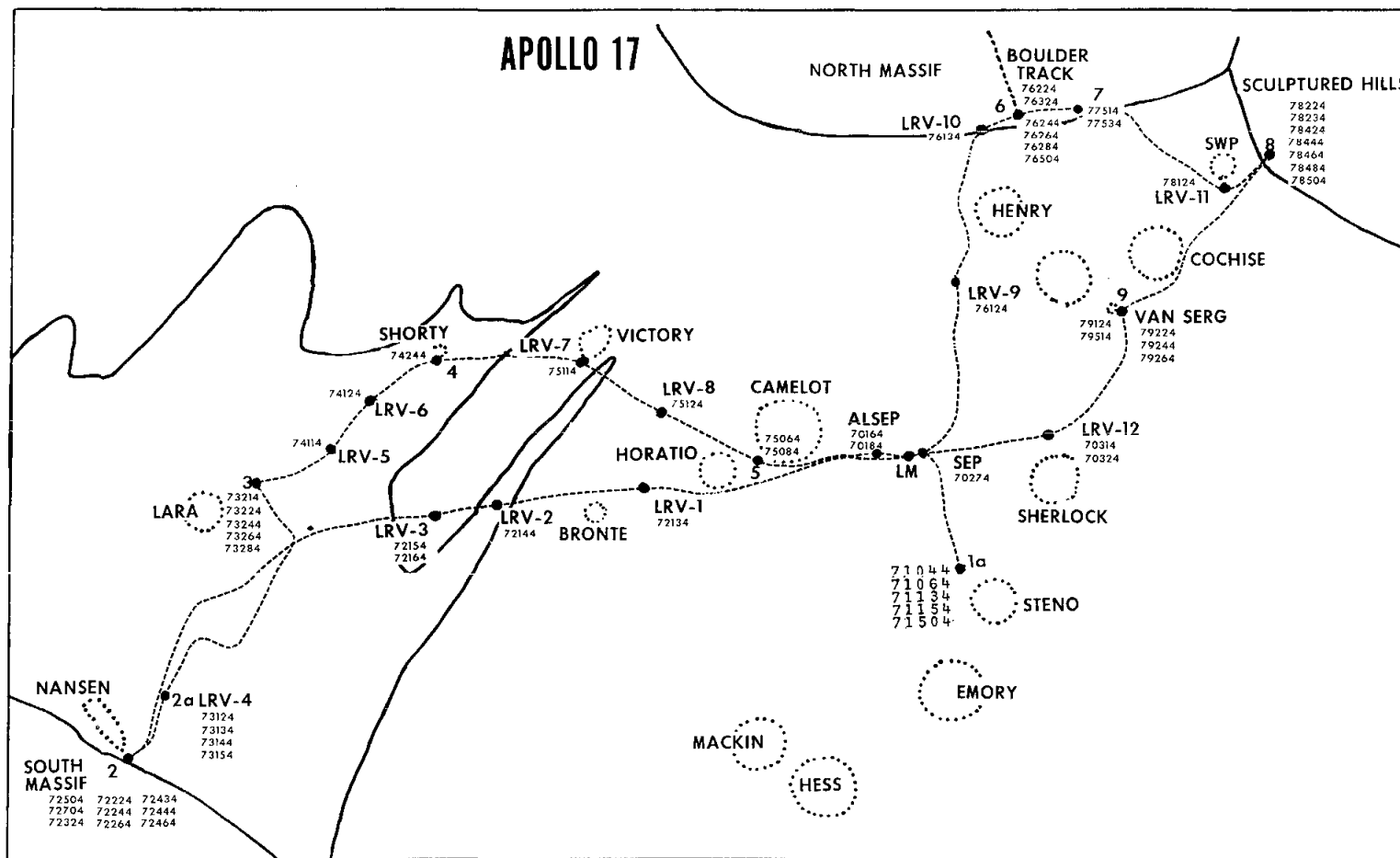


Figure 1

Sketch map of EVA traverse and sample collection stations  
 See figure 1 of Apollo 17 Lunar Sample Catalog (1)  
 Also see detailed map in USGS IR72 (2)

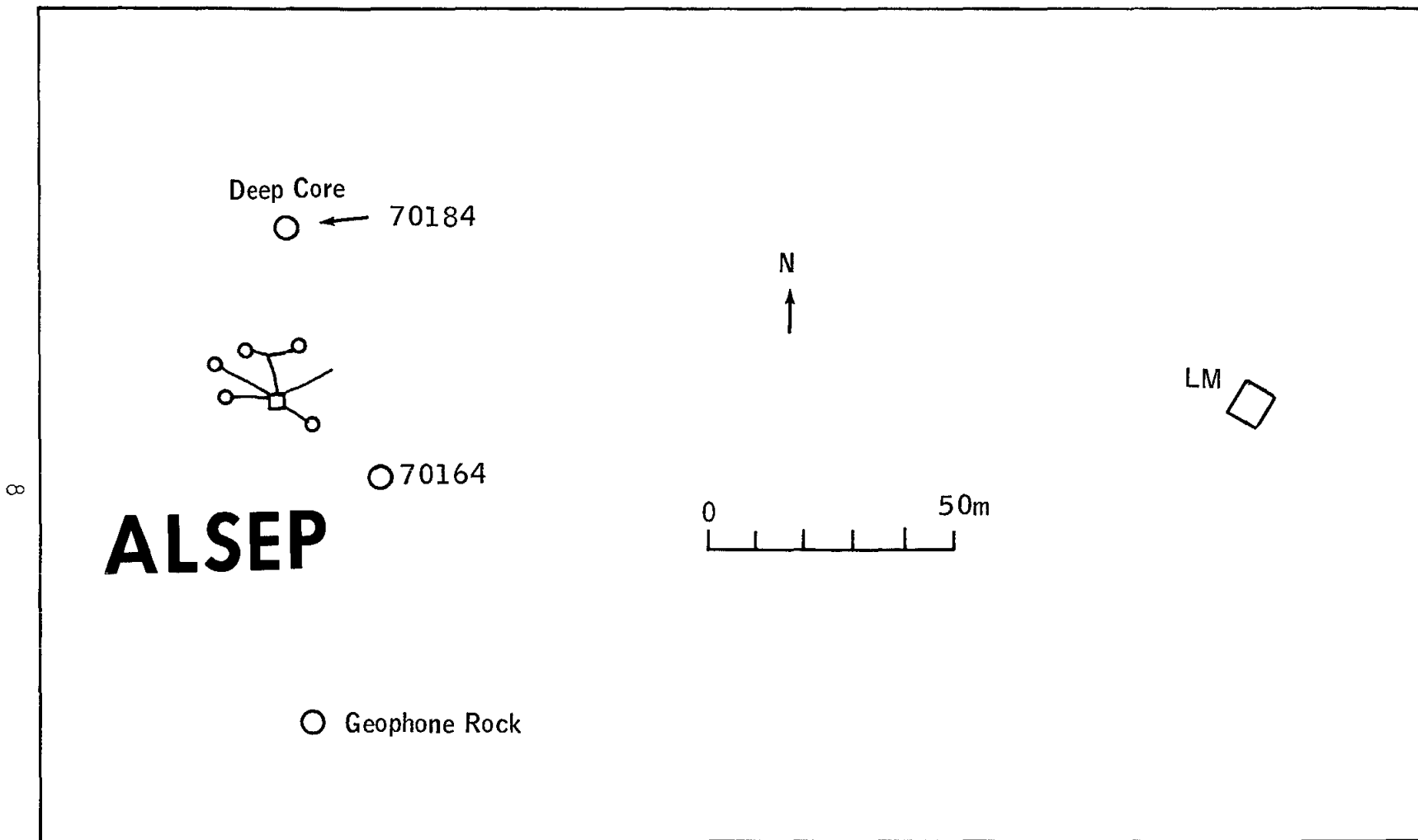


Figure 2

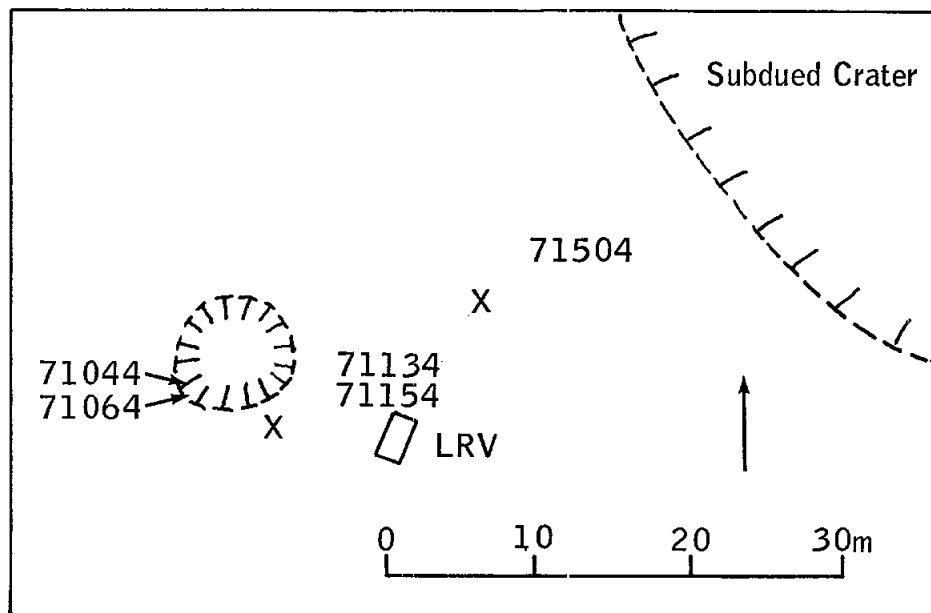


Figure 3

Station 1a

#### Station 1a

Station 1a is located on the subdued ejecta blanket of Steno crater about 1 km south of the SEP and about 150 m from the northwest rim of Steno. Most of the craters in the station area are subdued; ejecta is readily apparent only around the 10 m blocky crater which was the prime sampling area. Sample 71044 (1-2 cm deep) and 71064 (5-6 cm deep) were collected in the shadow of a boulder on the rim of the 10 m blocky crater. Samples 71134 and 71154 were collected during sampling of the chip hammered off of a rounded boulder nearby. 71504 was collected with the rake sample which was collected away from the prominent block population.

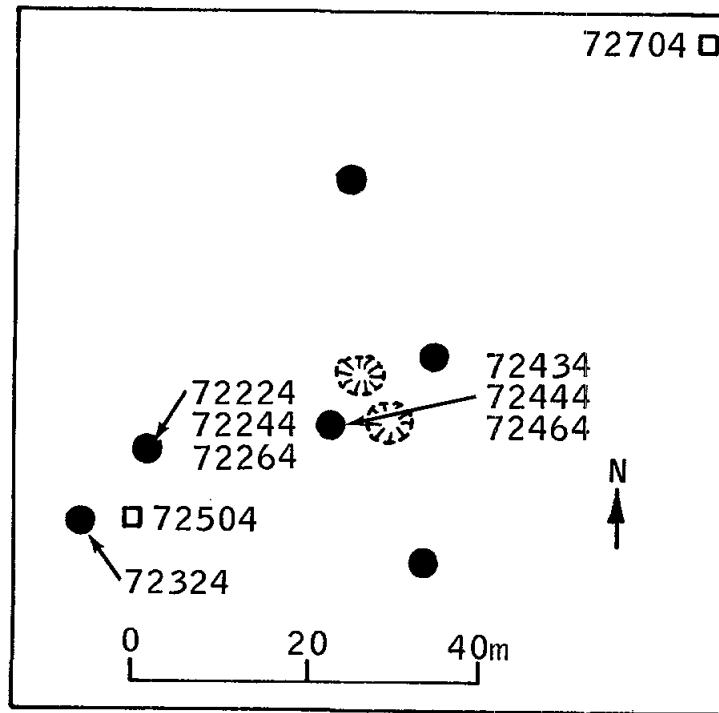
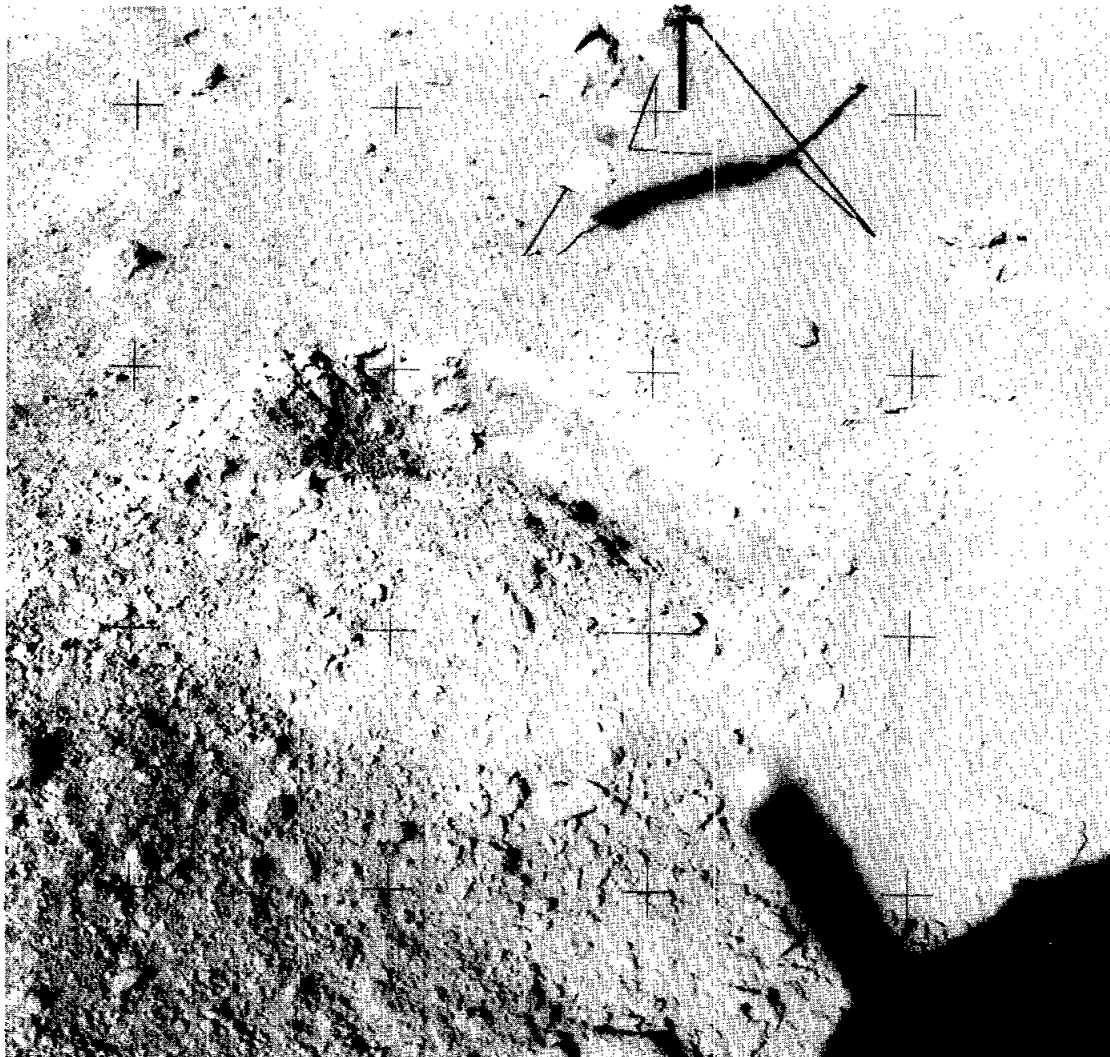


Figure 4 Station 2

### Station 2

Sample 72134 (LRV-1) was collected on a ray from one of the rare, blocky rimmed craters (10-15 m) in the generally block-free area between Horatio and Bronte craters. The soil in the area appeared typical of the dark mantle region. Sample 72144 (LRV-2) was scooped from the bright rim of a small crater on the tongue of the light landslide about 3.5 km west of the LM. Sample 72164 (LRV-3) is from the dark mantle region between the tongues of the light landslide and about 4.3 km west of the LM.

Station 2 was located at the foot of South Massif near the contact between the landslide and South Massif slope materials. The station area was near several boulders that probably either rolled or were ejected from a crater higher on the massif. Sample 72224 is from a fillet (top 3 cm) "up underneath an overhang" of a 2 m boulder, but was not permanently shadowed because the overhang faces east. 72244 is another sample of fillet (to a depth of 5 cm) and 72264 is a skim sample from the upper 1 cm of soil. 72324 is a permanently shadowed soil from about 20 cm under an overhang of another 2 m boulder. 72434 is from soil obtained by scooping up two rock chips. 72444 (upper 4 cm) and 72464 (skim sample) are from soil under a 2/3 m boulder. 72504 was collected near the rake sample and should be representative of surface material from South Massif. 72704 was collected near a second rake sample taken closer to Nansen Crater and is probably landslide material.



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AS17-138-21149

Figure 6

Trench at Station 3

### Station 2a

Station 2a was located east of Nansen crater 600 m northeast of Station 2 on the light colored material of the landslide. The crew described the surface material as blue-gray soil to a depth of about 5-10 cm and a lighter color soil below. 73124 was collected from the upper few centimeters near the trench. 73144 was from 15 cm below the surface in the trench and may be the most representative sample of landslide material returned because of its depth below the surface and distance from South Massif and the dark mantle regions. 73134 and 73154 were from soils collected while scooping up rock fragments.

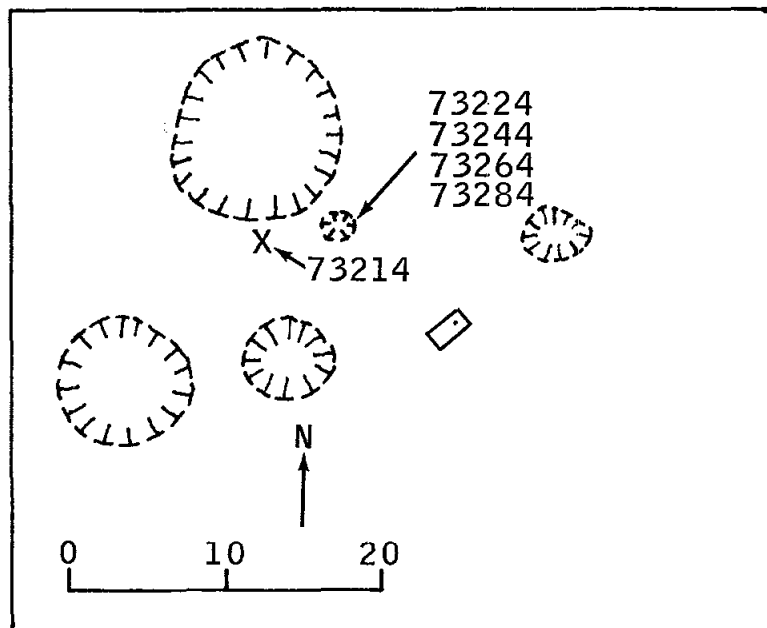


Figure 5 Station 3

### Station 3

Station 3 is located on light colored landslide material near the base of the scarp and approximately 50 meters east of the rim of Lara crater. Lara crater (500 m diameter) is the largest crater in the area and is probably covered by the landslide material such that the samples that were collected are probably related to the landslide and not to Lara crater ejecta. The 10 m diameter crater that was sampled appears to have penetrated only landslide materials. 73214 was collected from the rim of the 10 m crater. 73224 was a skimmed soil sample from the upper 1/2 cm of the soil near the trench. The trench (~10 cm deep) showed that medium-gray surface material overlies a lighter gray layer about 3 cm thick, which in turn, overlies marbled light and medium-gray material, Figure 6.

Sample 73244 was from the upper 5 cm of the trench and contains both medium-gray surface layer material and light-gray material from below the surface. 73264 is from 5-10 cm below the surface and is from the medium-gray part of the marbled zone. 73284 is also from 5-10 cm below the surface, but is from the light-gray part of the marbled zone.



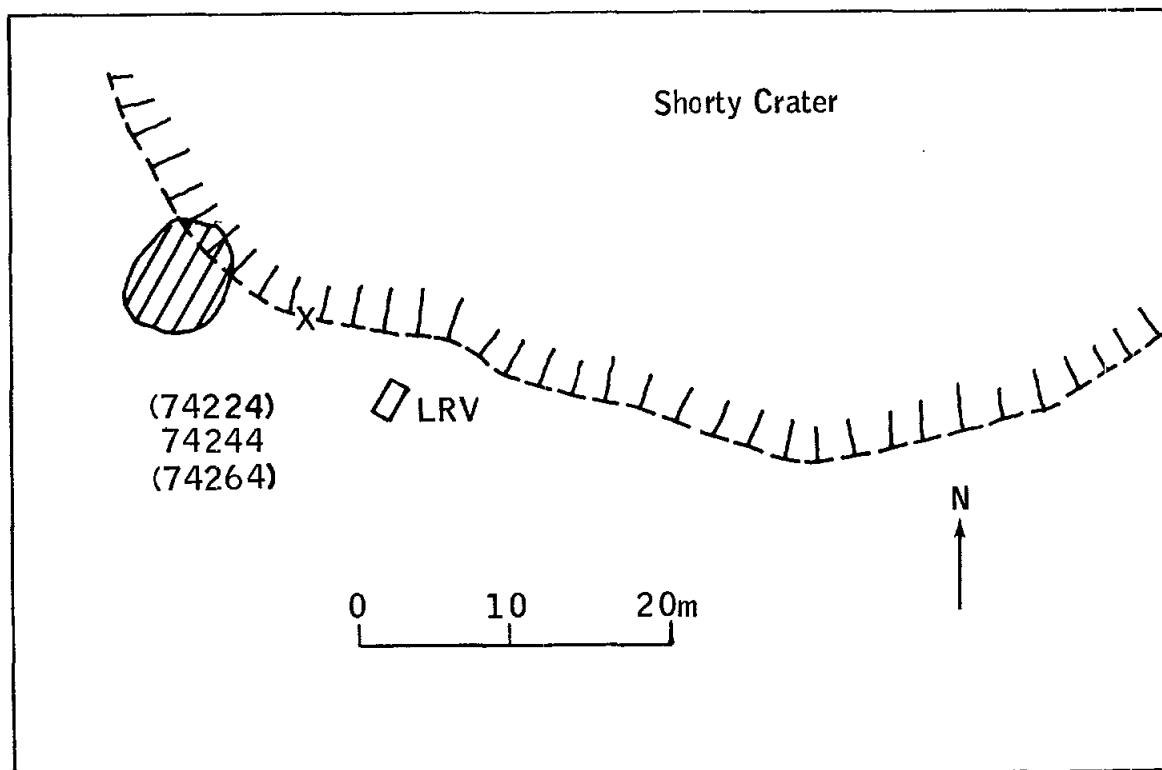


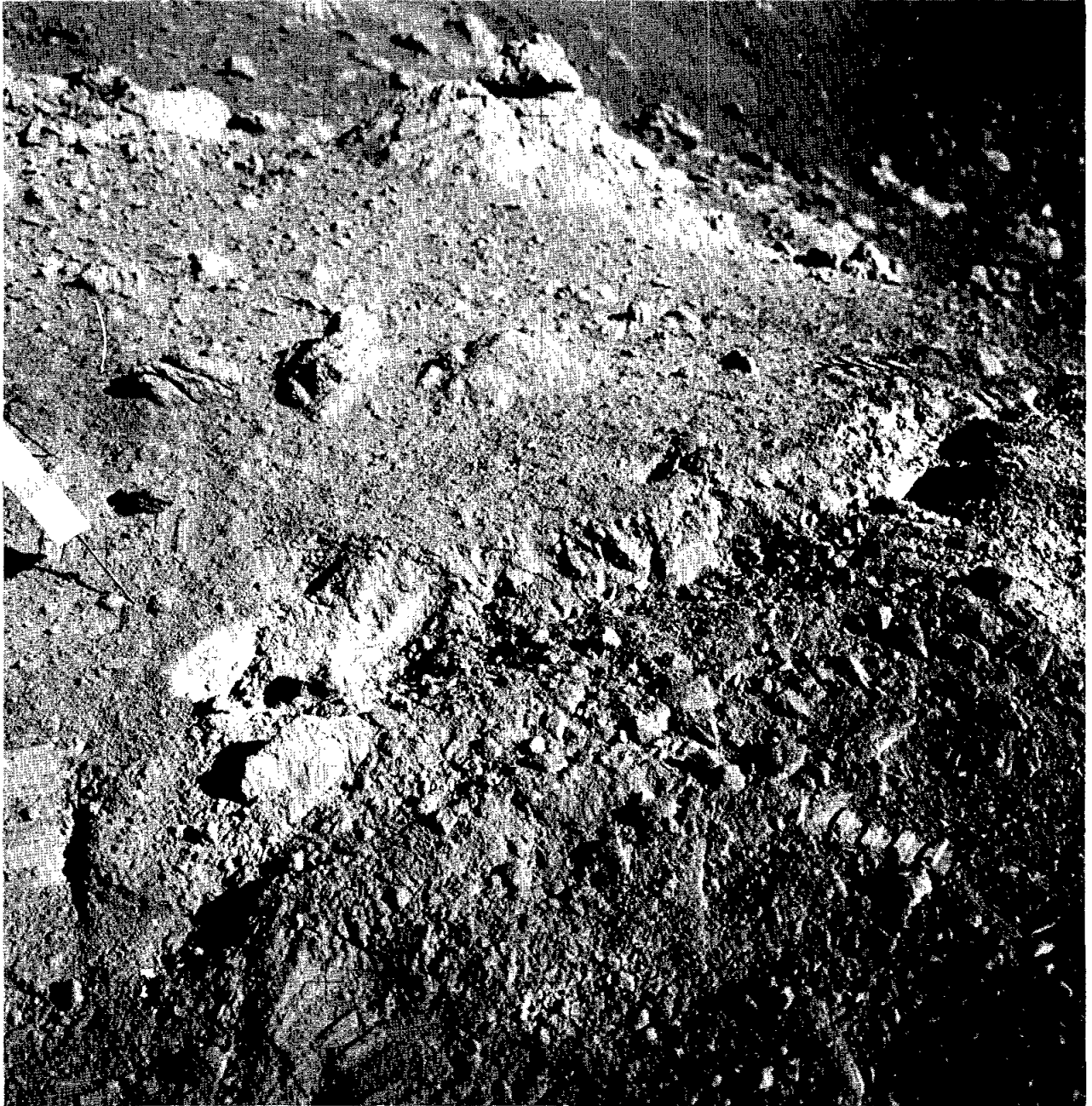
Figure 7

Station 4

#### Station 4

Two LRV samples were collected on the traverse to station 4. 74114 (LRV-5) was collected at an unusually blocky 15 m crater about 700 meters northeast of station 3. 74124 (LRV-6) was collected in the light-colored landslide material 1.1 km northeast of station 3.

Station 4 was located on the south rim of Shorty, a 110 m crater near the north edge of the landslide. Shorty is interpreted as a young impact crater. A trench dug in the rim crest exposed compact reddish soil buried beneath a 1/2 cm thick gray soil (Figure 8). 10 cm-wide yellowish bands form the southwest and northeast margins of the deposit and these are in steep sharp contact with the gray soil adjacent to the colored soil. 74220 is a sample of the orange soil which has not been sieved. 74244 is from the gray soil at the southwest of the meter-wide band of orange soil. 74260 (also unsieved) is from the northeast side.



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AS17-137-20986

Figure 8

Trench With Orange Soil at Station 4

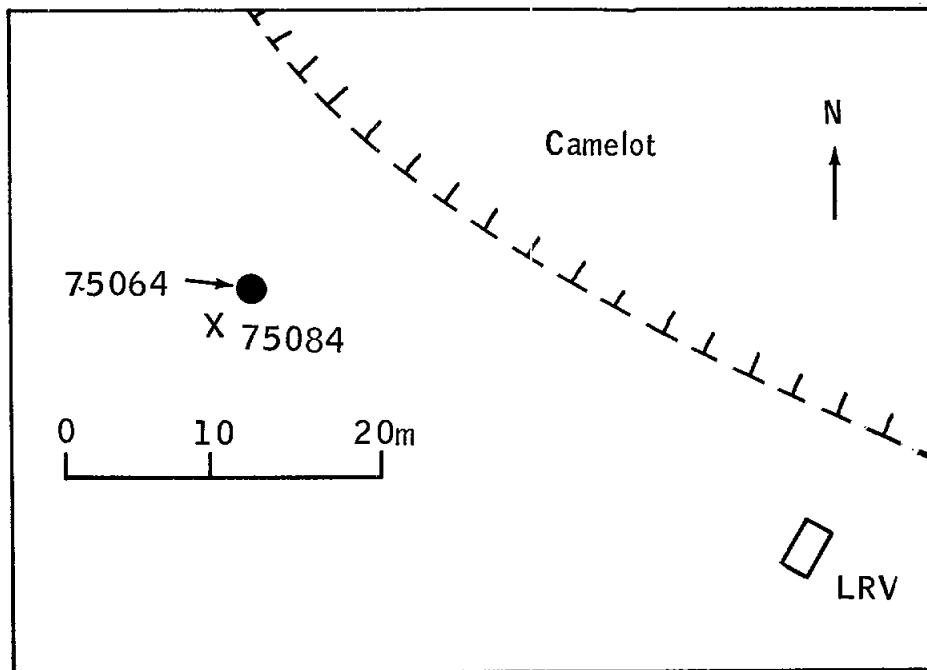


Figure 9 Station 5

#### Station 5

Two LRV samples were collected on the traverse to station 5. 75114 (LRV-7) is from the rim of Victory which was judged by the crew to be a series of craters. The ejecta blanket and rim appeared to be blanketed by dark mantle and the presence of landslide material was not detected by the crew at the sample site. 75124 (LRV-8) was collected at an area that was away from ejecta of any large crater and is considered a good sample of dark mantle material.

Station 5 is located within a block field on the southwest rim of the large (600 m) crater Camelot. The sample area is crowded with subrounded boulders of basalt of uniform lithology. Dark mantle material appears to partly bury these boulders which are themselves apparently cleaned by the zap-pitting process. 75064 is from a soil collected from a small hollow (1 cm deep) in a flat boulder several meters across at a point 1/2 m from the edge. A local impact probably threw this soil onto the rock. 75084 is a typical soil scooped from the upper 5 cm of the regolith.

Station 6

Two rover samples 76124 (LRV-9) and 76134 (LRV-10) were collected along the traverse to station 6. 76124 was scooped from the upper few centimeters of typical soil about half-way between SEP and station 6. Possibly some of these fragments are from Henry crater. 76134 was collected on the north side of Turning Point Rock and may include material from the fillet of this rock.

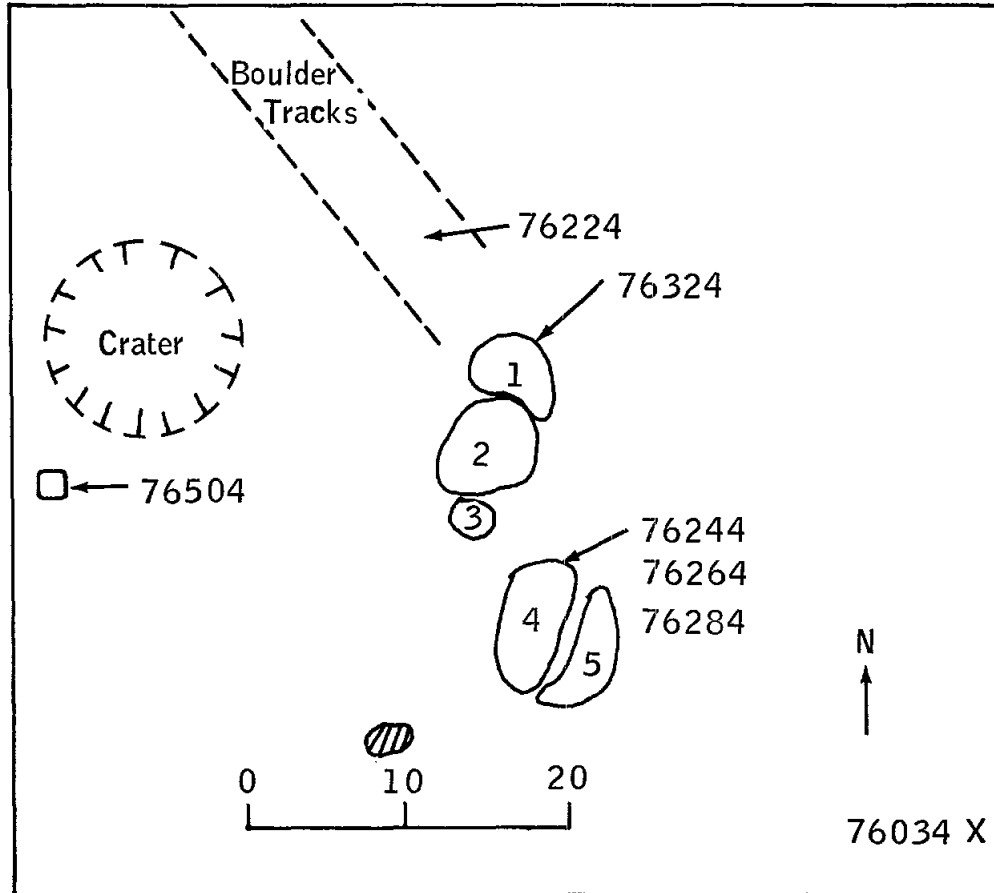


Figure 10

Station 6

Station 6 was at a cluster of five boulders on the south slope of North Massif. This area is covered by many large blocks and smaller fragments which have come from higher on the slope. 76224 was collected within the boulder track leading to this cluster of boulders (which may have originally been one boulder). This soil is similar to the other soils collected in the area of station 6. 76324 was collected from the top surface of boulder No. 1 and is also similar in color to other soils in the area of station 6. It was probably derived from soils upslope and transported by some cratering event to the top of the boulder.

Boulder No. 4 has a prominent north overhang, beneath which a shadowed sample 76244 was collected along with two samples (76264 and 76284) which were collected outside the shadow. Sample 76504 was collected on the ejecta blanket of a 10 meter crater along with a rake sample 76535. Another sample 76034 was collected a few meters downslope from station 6.

#### Station 7

Station 7 was located at the base of the North Massif, just above the break in slope between the valley floor and the massif. The two soils from this station (77514 and 77534) were both bagged with rock fragments selected from the surface. "Bag 542 is another bag of goodies" LMP.

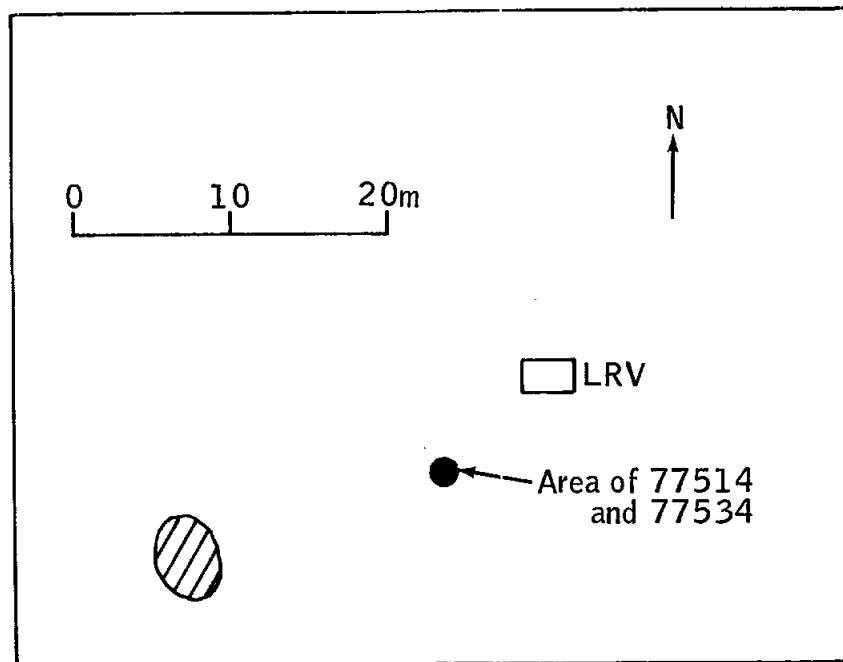


Figure 11

Station 7

## Station 8

On the traverse to station 8 the crew collected a LRV-11 sample (78124) near the rim of SWP crater. The rocks in the sample area were identified by the crew as clods of soil breccia that break up easily.

Station 8 was located at a moderately inclined transition zone between the sculptured hills and the valley floor. The crew climbed up towards the hills to sample a 2/3 m gabbroic boulder. Large rocks and boulders were rare in the station area. None of the craters had raised or blocky rims. With the exception of the boulder, all the rocks larger than 20 cm had the appearance of mare basalt. Sample 78224 was collected from beneath the 2/3 m boulder and 78234 from the top and included chips of the boulder. A 25 cm deep trench was sampled at the bottom (78424 = 15 to 25 cm) and in the middle (78444 = 6 to 15 cm, 78464 = 1 to 6 cm). Sample 78484 was skimmed from the upper 1/2 to 1 cm at the edge of the trench. (Figure 13) Sample 78504 was scooped from the rake sample area near a 10 m crater.

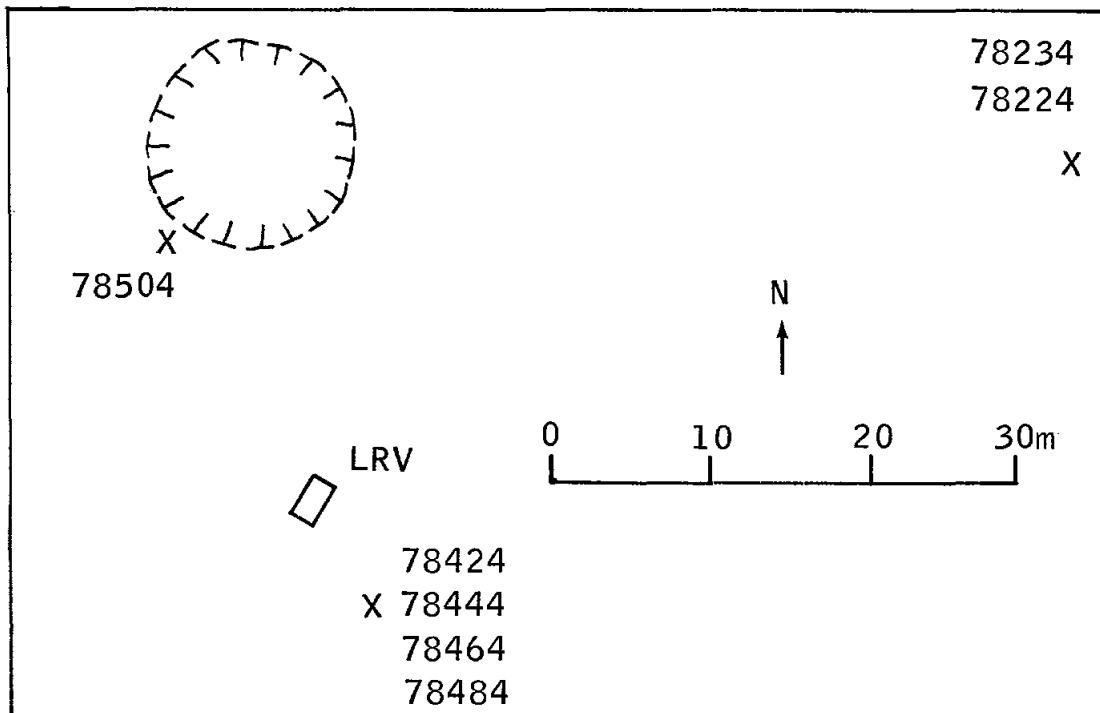


Figure 12

Station 8



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AS17-142-21723

Figure 13

Trench at Station 8

### Station 9

Van Serg Crater (90 m in diameter) is a fresh young impact crater with a raised blocky rim and well defined ejecta blanket. Station 9 was on the southeast rim of this crater. The large samples returned are dominated by a dark matrix breccia. The trench samples (about 70 m to the southeast of crater rim) exposed about 10 cm of a light gray soil unit below a 7 cm upper dark unit (Figure 15).

79224, approximate depth 0-2 cm  
79244, approximate depth 2-7 cm  
79264, approximate depth 7-17 cm

Samples 79124 and 79514 were collected on the center rim near a boulder that was also sampled.

NOTE: 79160 was not returned from the lunar surface!



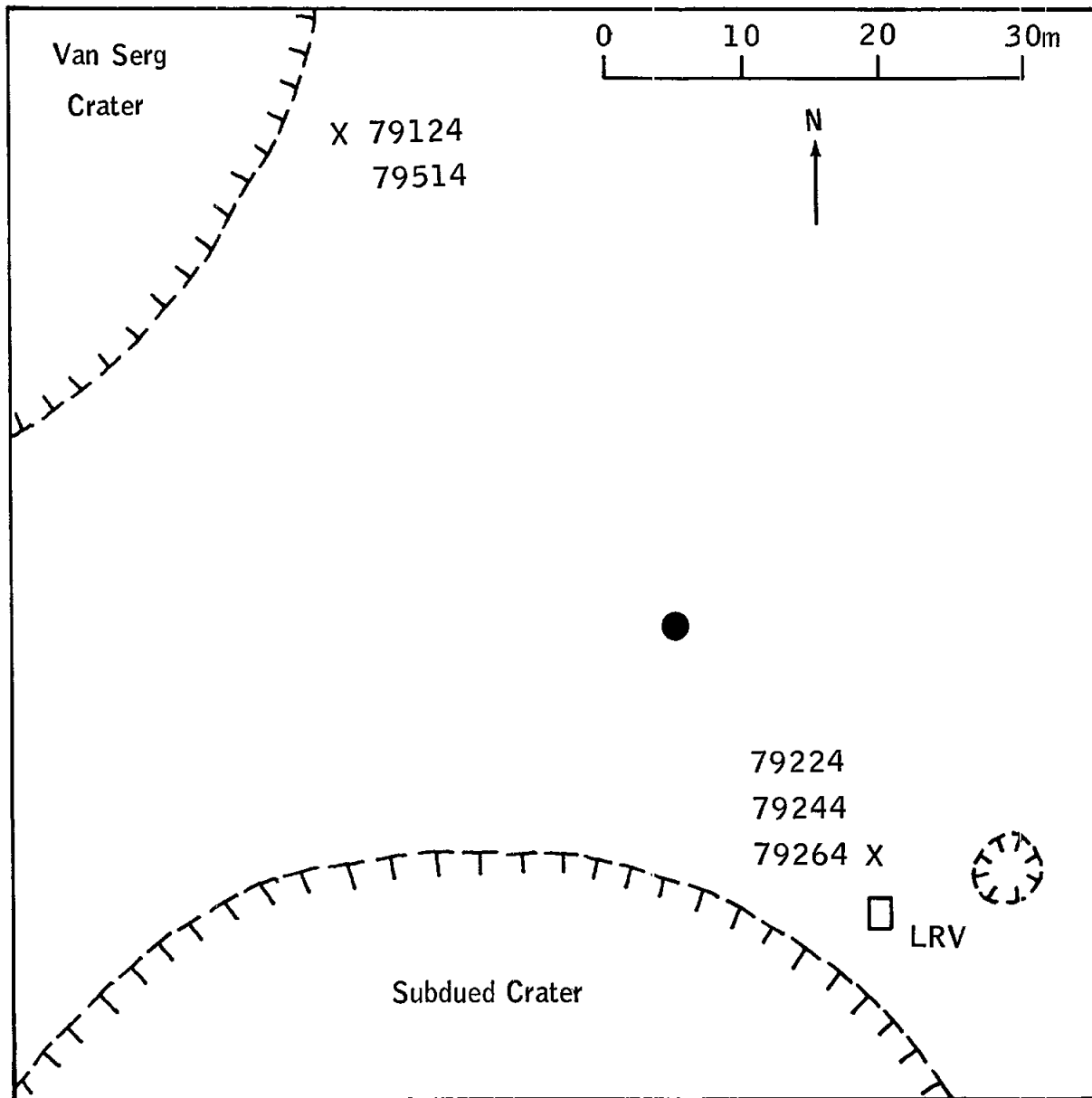
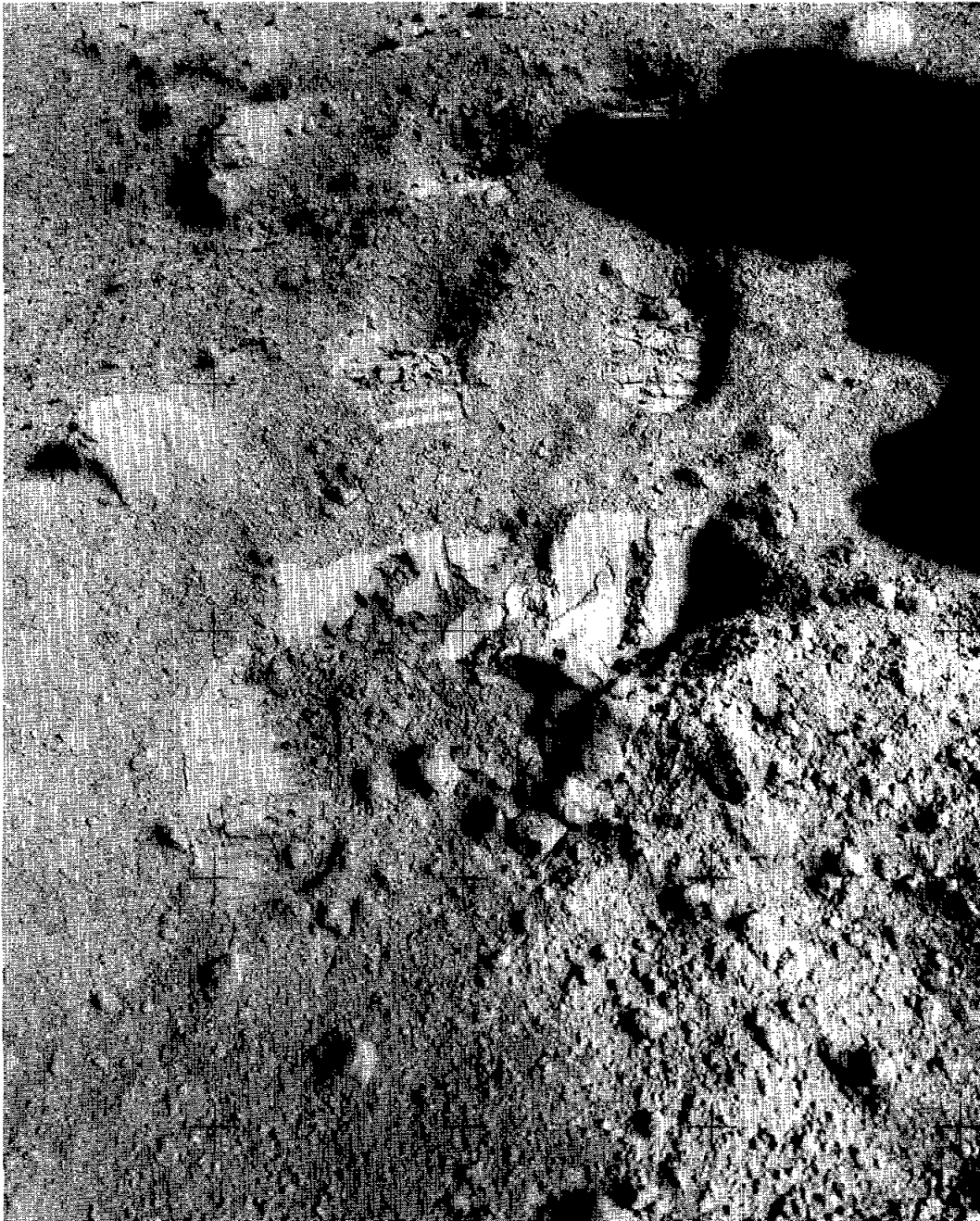


Figure 14

Station 9



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Figure 15

Trench at Station 9

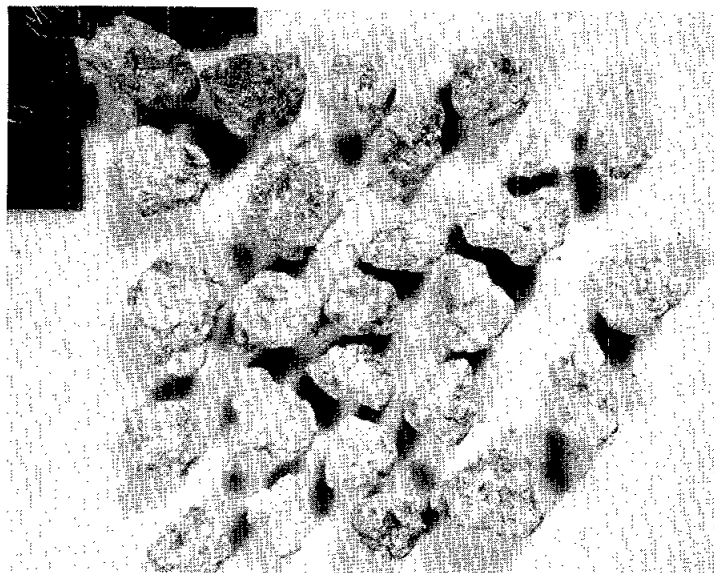
70054,1  
Breccia  
50 particles, 63.81 grams

Coherence: Tough  
Shape: Plate-like and angular  
Surface: Fresh  
Color: Tannish gray (greenish gray?)  
Mineralogy: 60% plagioclase, 30% gray mineral, 10% greenish mineral  
Remarks: All identical to each other; annealed texture.  
Photo Number: S-73-23478



70054,2  
Anorthosite  
25 particles, 30.6 grams

Coherence: Friable  
Shape: Subrounded  
Surface: Fresh  
Color: White  
Mineralogy: 98% chalky white plagioclase, 2% light gray,  
phenocrysts  $\approx$  1 mm.  
Remarks: All identical to each other  
Photo Number: S-73-23479



70054,3

Anorthosite  
179 particles, 23.59 grams

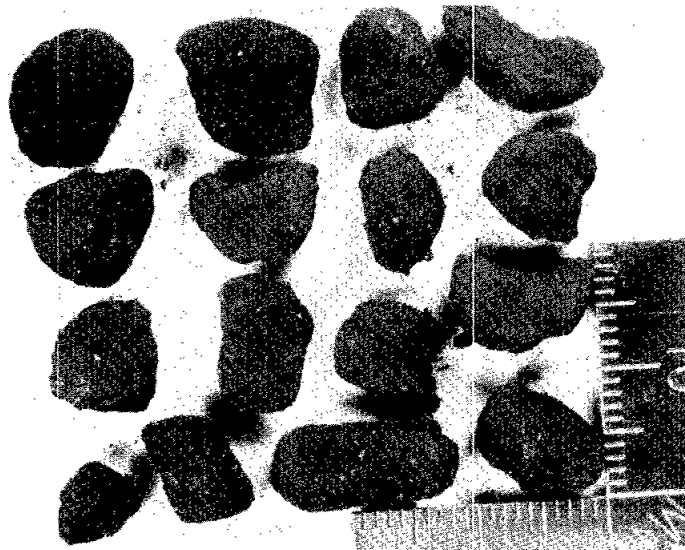
Coherence: Friable  
Shape: Subrounded  
Surface: Fresh  
Color: White  
Mineralogy: 98% chalky white plagioclase, 2% light gray,  
phenocrysts  $\approx$  1 mm.  
Remarks: All identical to each other  
Photo Number: S-73-23480



70054,4

Soil Breccia  
15 particles, 7.10 grams

Coherence: Very friable  
Shape: Rounded  
Color: Black  
Mineralogy: 98% aphanitic, 2% white clasts  
Remarks: All the same as one another and as ,5; similar to 79035.  
Photo Number: S-73-23481



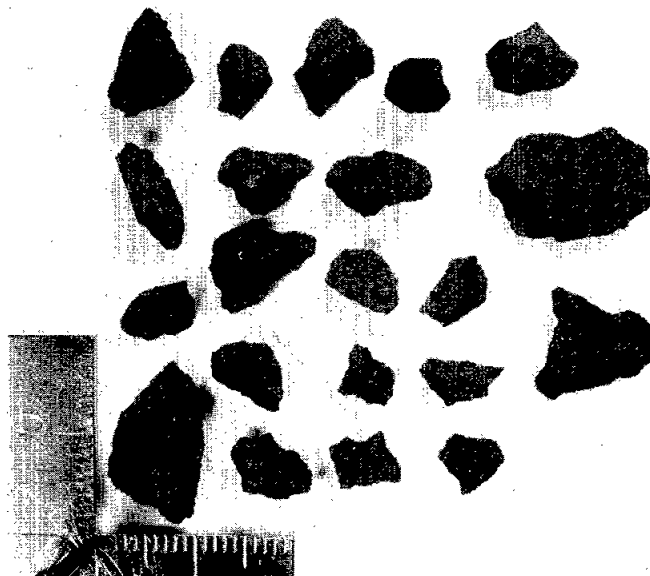
70054,5  
Soil Breccia  
84 particles, 10.410 grams

Coherence: Very friable  
Shape: Rounded  
Color: Black  
Mineralogy: 98% aphanitic, 2% white clasts  
Remarks: All the same as one another and as 79035.  
Photo Number: S-73-23482



70054,6  
Basalt  
21 particles, 7.010 grams

Coherence: Tough, equigranular  
Shape: Angular  
Surface: Fresh  
Color: Dark gray  
Mineralogy: 50% pyroxene, 40% plagioclase, 10% opaque  
Remarks: Grain size 0.2 mm.  
Photo Number: S-73-23483



70054,7  
Basalt  
15 particles, 3.940 grams

Coherence: Tough equigranular  
Shape: Angular  
Surface: Hackly  
Color: Light gray  
Mineralogy: 50% plagioclase, 15% opaque, 35% light brown pyroxene.  
Remarks: Grain size 1-2 mm; similar to each other; some of these are similar to 70017 which was in this bag.  
Photo Number: S-73-23484



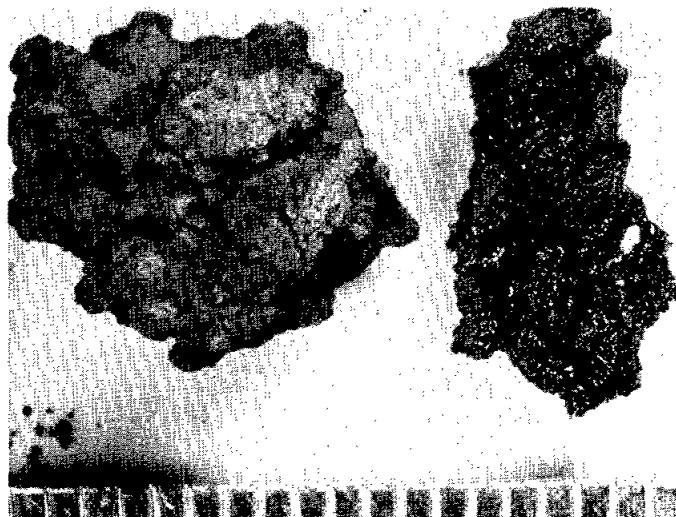
70054,8  
Basalt(?)  
11 particles, 3.010 grams

Coherence: Tough  
Shape: Subrounded to angular  
Color: Gray  
Mineralogy: Aphanitic  
Remarks: Variable texture. Grain size all less than 0.5 mm.  
Photo Number: S-73-23485



70054,9  
Agglutinate  
2 particles, 0.860 grams

Coherence: Delicate  
Shape: Irregular  
Surface: One particle has shiny glass coat  
Color: Gray  
Mineralogy: 50% black vesicular glass, 50% light gray soil  
Remarks: One particle has marble texture.  
Photo Number: S-73-23486



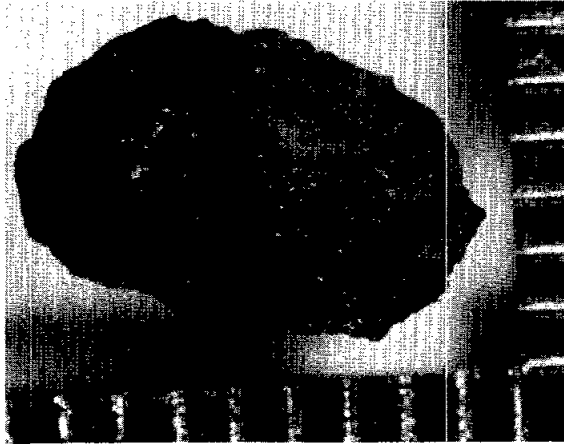
70054,10  
Breccia  
10 particles, 2.630 grams

Coherence: Tough  
Shape: Irregular  
Surface: 40% coated with vesicular black glass  
Color: Dark gray  
Mineralogy: 90% dark aphanitic matrix with 10% white clasts  
Photo Number: S-73-23487



70054,11  
Glass  
1 particle, 0.250 grams

Coherence: Tough  
Shape: Rounded, blocky  
Color: Dark greenish gray  
Mineralogy: All glass  
Photo Number: S-73-23488



70054,12  
Breccia  
2 particles, 0.370 grams

Coherence: Friable  
Shape: Subangular  
Color: Brown  
Mineralogy: 50% plagioclase, 40% pyroxene, 10% matrix  
Remarks: Grain size ~0.5 mm.  
Photo Number: S-73-23489





70054,13

Feldspathic Basalt  
3 particles, 0.660 grams

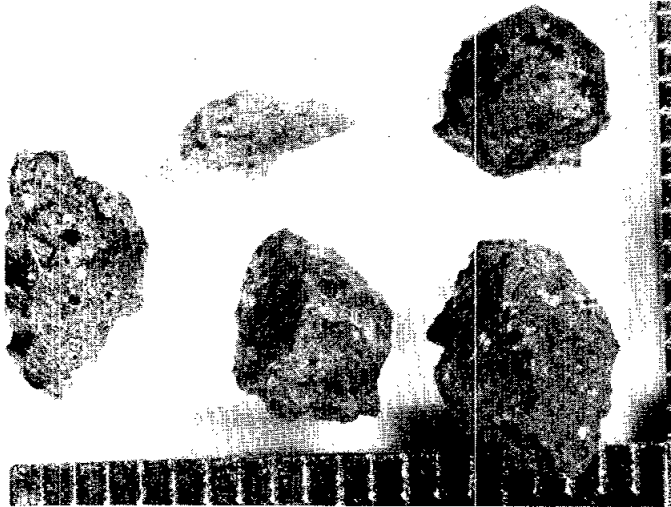
Coherence: Tough  
Shape: Angular, 5% Vugs (0.5mm)  
Color: Tannish gray  
Mineralogy: 70% plagioclase, 25% orthopyroxene, 5% yellow green  
olivine  
Remarks: This may be a metamorphic rock  
Photo Number: S-73-23490



70054,14

Anorthositic Breccia  
5 particles, 0.570 grams

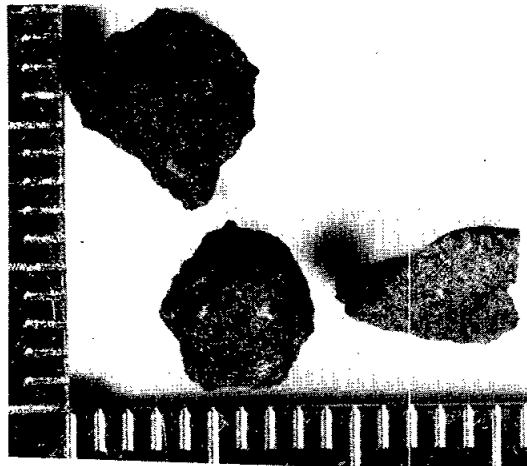
Coherence: Tough  
Shape: Angular to rounded  
Color: White  
Mineralogy: 80% plagioclase, 20% gray mineral  
Remarks: Annealed breccia texture, one particle has 10% vesicles  
Photo Number: S-73-23491



70064,1

Basalt  
3 particles, 0.57 grams

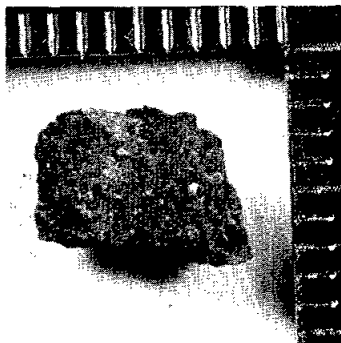
Coherence: Tough  
Shape: Subangular to subround  
Color: Dark gray (N4)  
Mineralogy: Aphanitic (one olivine crystal)  
Photo Number: S-73-21372



70064,2

Annealed, Plagioclase Rich Breccia  
1 particle, 0.19 grams

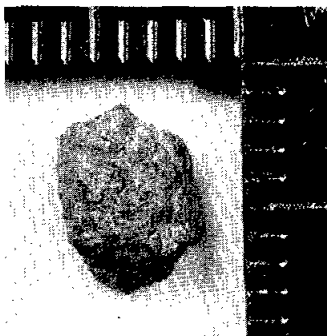
Coherence: Tough  
Shape: Angular  
Surface: Broken  
Color: Light gray  
Mineralogy: ~80% plagioclase, ~20% gray material (orthopyroxene?)  
Photo Number: S-73-21374



70064,3

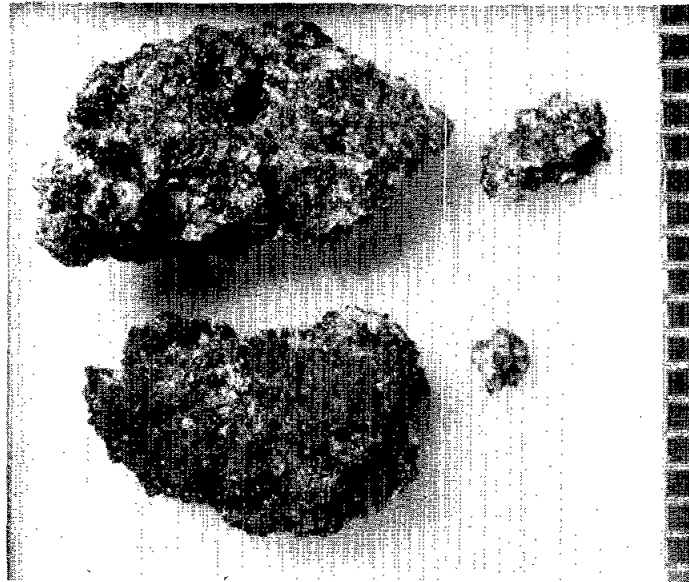
Plagioclase Rich Breccia  
1 particle, 0.1 gram

Coherence: Friable  
Shape: Rounded  
Color: White  
Mineralogy: 90% plagioclase, 10% green mineral (or glass?)  
Photo Number: S-73-21375



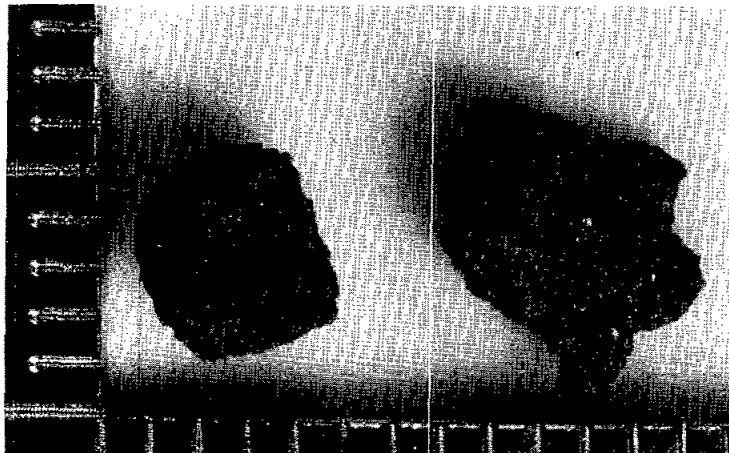
70164,1  
Basalt  
4 particles, 0.725 grams

Coherence: Friable to coherent; with some penetrative fracturing  
Shape: Angular  
Surface: Granular; one surface of one grain coated with thin dark layer of dust(?); no zap pits observed  
Color: Light cinnamon with white plagioclase laths visible to naked eye  
Mineralogy: Plagioclase (white) laths up to 2 mm long. Cinnamon pyroxene grains and lustrous black ilmenite.  
Remarks: Similar to 70165, grain size 1 mm  
Photo Number: S-73-18711



70164,2  
Basalts  
2 particles, 0.200 grams

Coherence: Coherent  
Shape: Rounded  
Surface: Granular, with small irregular cavities; no euhedral minerals in vugs. Some surfaces partially dust covered  
Color: Dark reddish gray  
Mineralogy: Plagioclase, brown pyroxene, ilmenite. Average grain size 0.2 mm  
Photo Number: S-73-18712



70164,3

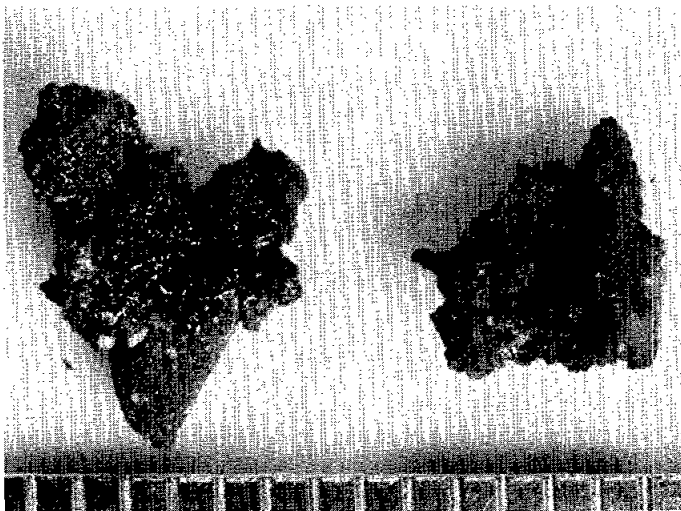
Glass-Welded Agglutinates  
2 particles, 0.140 grams

Coherence: Coherent

Shape: Irregular, delicate

Remarks: These particles consist of dark gray soil microbreccias, with angular white, yellowish, and cinnamon clasts, welded into aggregates by crusts and filaments of vesicular brownish-black glass.

Photo Number: S-73-18713



70164,4

Soil Breccia  
1-1/2 particles, 0.101 grams

Coherence: Friable; one piece broke off during examination

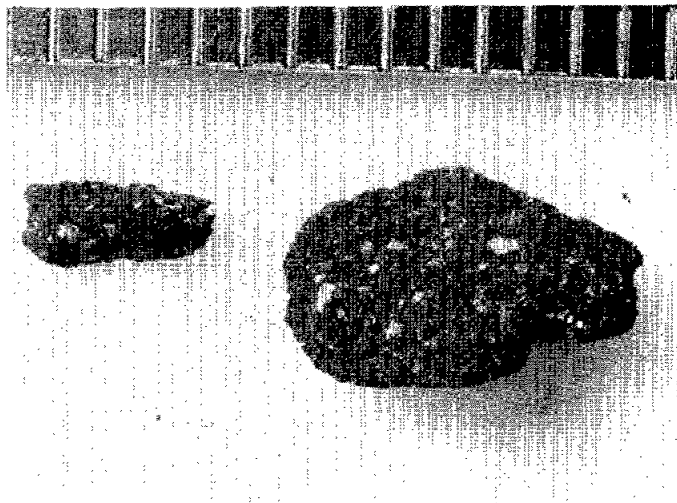
Shape: Rounded

Surface: Grainy

Color: Dark gray

Remarks: Very fine-grained clastic matrix; clasts angular to rounded, white, yellow, cinnamon, lustrous black. Particle does not appear strongly annealed. No glass coating or zap pits observed.

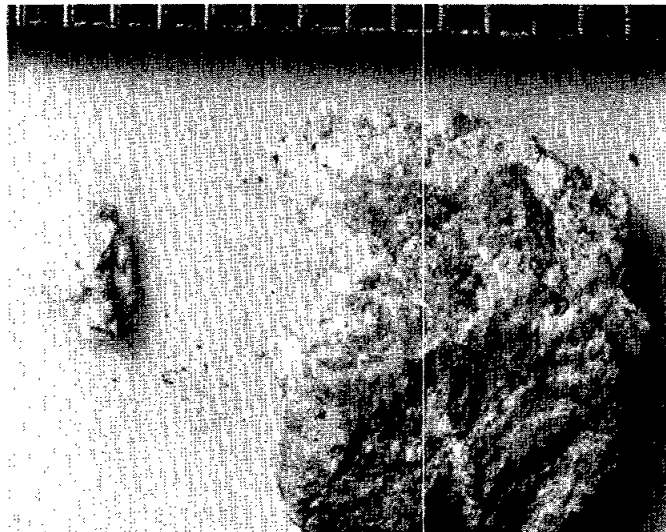
Photo Number: S-73-18714



70164,5

Plagioclase Rich Breccia  
1 particle, 0.305 grams

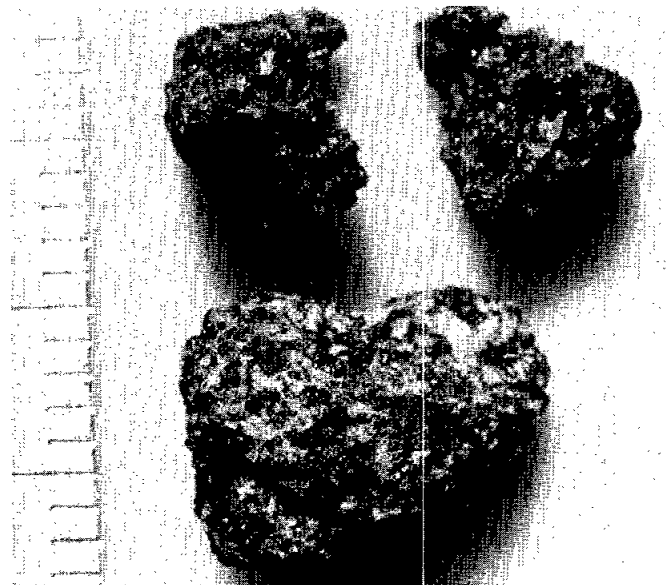
Coherence: Friable to coherent  
Shape: Angular, slabby  
Surface: Rough, grainy; with one small patch of thin black glass on surface that is stained, one coated with light brown material  
Color: White  
Mineralogy: Plagioclase (60%) mainly in chalky white ill-defined domains and vitreous tablets. Mafic silicate (40%), small yellow grains ~0.3 mm. Opaques: very small and sparse (~1%). A few thin veinlets of black glass. This fragment appears to be a noritic (or troctolitic) rock crushed in situ. Mafic silicates are evenly distributed throughout, but the feldspar has been partially converted to chalky material and may include maskelynite.  
Photo Number: S-73-18715



70184,1

Basalt  
3 particles, 1.436 grams

Coherence: Tough  
Shape: Angular, 10% Vugs  
Surface: Freshly broken  
Color: Gray (N5)  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaques  
Remarks: Possibly pieces of 70185. Grain size ~2 mm  
Photo Number: S-73-19423



70184,2

Breccia Mixed with Vesicular Glass  
2 particles, 0.208 grams

Coherence: Delicate  
Shape: Angular, marbled texture, vesicles (5mm)  
Color: Black glass, gray breccia  
Remarks: These two particles were probably originally part of each other  
Photo Number: S-73-19427



70274,1

Basalt  
5 particles, 1.27 grams

Coherence: Tough  
Shape: Angular  
Surface: Freshly broken  
Color: Gray (N5)  
Mineralogy: 45% plagioclase, 40% light brown pyroxene, 15% shiny black ilmenite  
Remarks: Similar to 70275  
Photo Number: S-73-21383

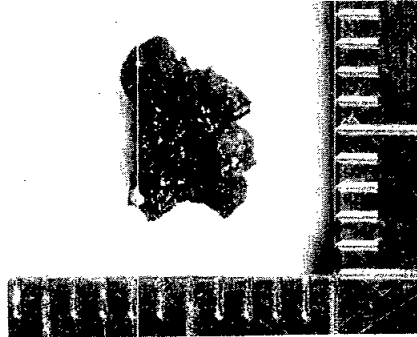


70274,2

Agglutinate

1 particle, 0.08 grams

Coherence: Friable  
Shape: Angular, irregular  
Surface: Vesicular glass on one side, gray matrix breccia on other  
Color: Gray  
Mineralogy: Glass and breccia  
Photo Number: S-73-21387

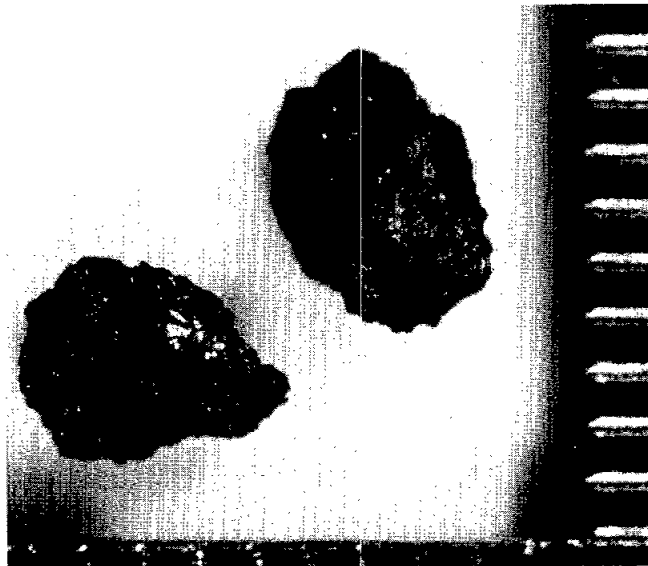


70274,3

Basalt

2 particles, 0.2 grams

Coherence: Tough  
Shape: Angular, 5 % Vugs  
Surface: Fresh  
Color: Dark gray  
Mineralogy: Aphanitic, 1% olivine  
Photo Number: S-73-21385





70274,4

Breccia  
1 particle, 0.67 grams

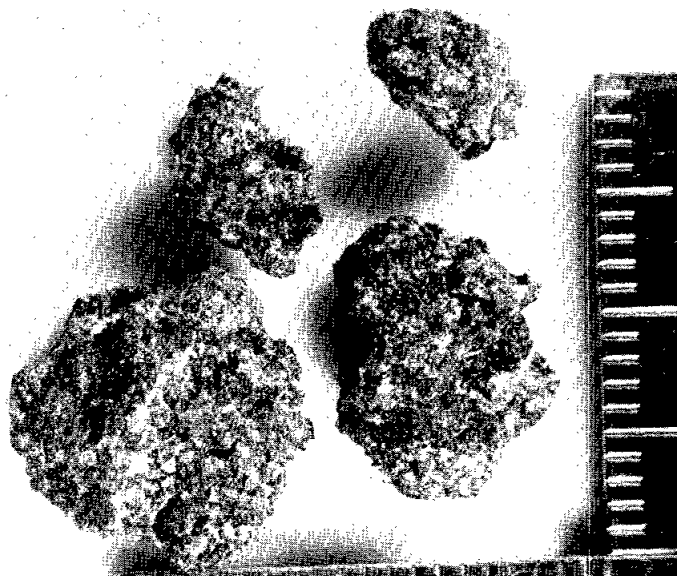
Shape: Subrounded  
Surface: 5% glass coating  
Color: Gray  
Mineralogy: 70% dark gray matrix (fine-grained), 30% white clasts  
Remarks: Similar to breccias from station 9  
Photo Number: S-73-21384



70314,1

Basalt  
4 particles, 2.24 grams

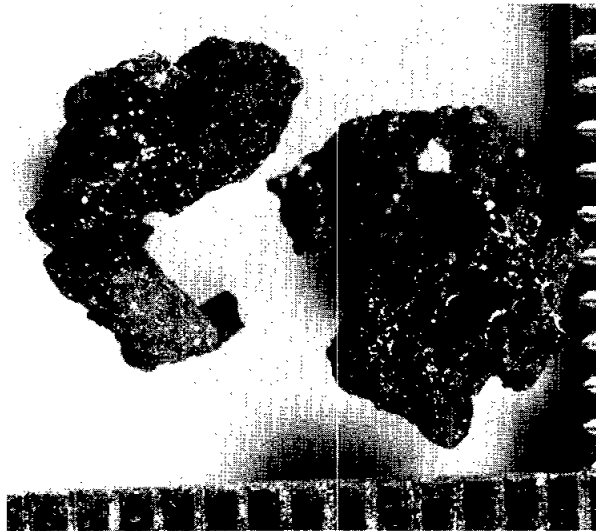
Coherence: Tough  
Shape: Angular, 15% Vugs (1mm)  
Color: Light gray  
Mineralogy: 45% plagioclase, 40% light brown pyroxene, 15% opaque  
Remarks: Grain size 1 mm  
Photo Number: S-73-21377



70314,2

Agglutinates  
2 particles, 0.27 grams

Coherence: Delicate  
Shape: Irregular  
Surface: Irregular, with some shiny vesicular black glass  
Color: Dark gray  
Mineralogy: 50% glass, 50% dark gray breccia with white clasts  
Photo Number: S-73-21380



70314,3

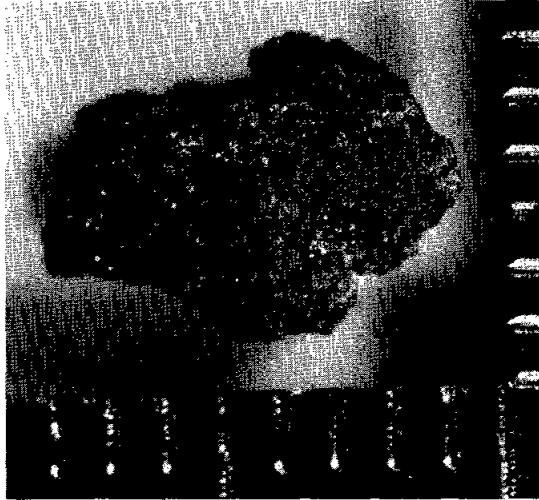
Soil Breccia  
1 particle, 0.85 grams

Coherence: Friable  
Shape: Rounded  
Surface: Grainy  
Color: Dark gray  
Mineralogy: 40% plagioclase, 60% mafic or glass  
Remarks: No large clasts  
Photo Number: S-73-21378



70314,4  
Basalt(?)  
1 particle, 0.21 grams

Coherence: Tough  
Shape: Angular  
Surface: Rough  
Color: Gray  
Mineralogy: 30% olivine, 30% pyroxene, 10% opaque, 30% plagioclase  
Remarks: Grain size ~1 mm, olivine is 2 mm  
Photo Number: S-73-21379



70314,5  
Basalt  
2 particles, 0.16 grams

Coherence: Tough  
Shape: Angular  
Color: Gray  
Mineralogy: Aphanitic  
Photo Number: S-73-21381



70314,6  
Basalt  
2 particles, 1.11 grams

Coherence: Tough  
Shape: Subrounded, microfractures, 5% Vugs  
Color: Gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: Grain size less than 0.5 mm  
Photo Number: S-73-21376



PRELIMINARY DESCRIPTION

Not yet dusted, photographed or subdivided

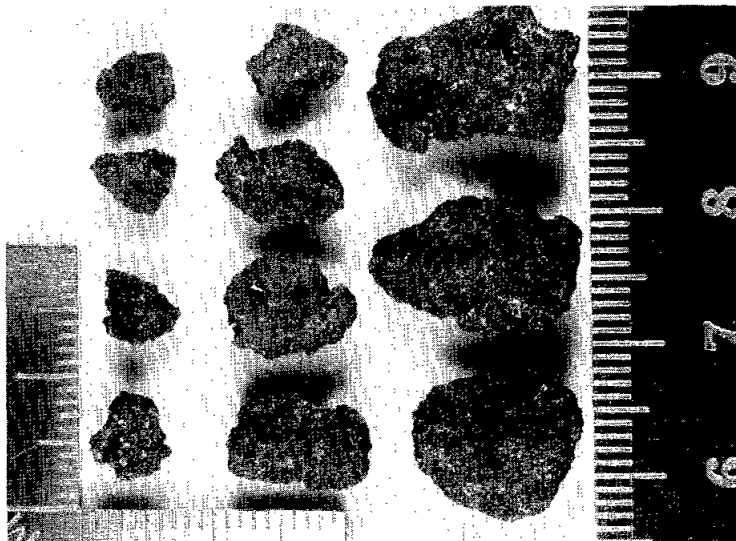
70324  
4.00 grams

10 vuggy basalt fragments  
3 breccia fragments

71044,1

Basalt  
11 particles, 6.740 grams

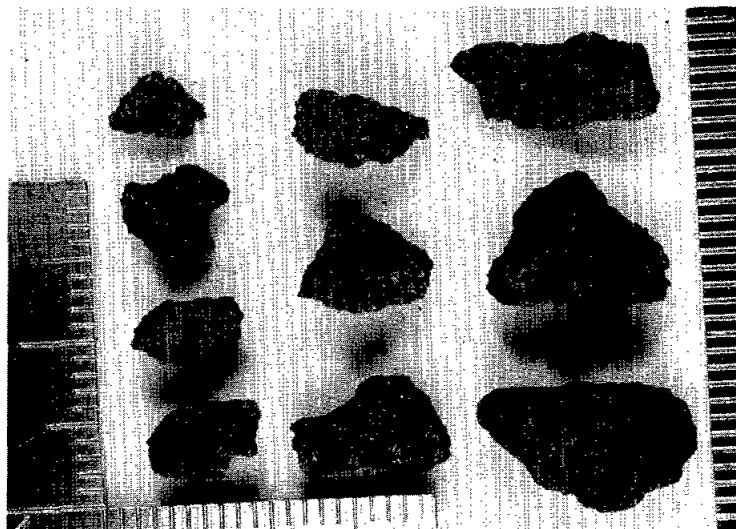
Coherence: Tough  
Shape: Angular, 10% Vugs  
Surface: Freshly broken, hackly  
Color: Gray (N4)  
Mineralogy: 45% plagioclase, 45% cinnamon brown pyroxene, 10% opaque, no olivine  
Remarks: One grain has shiny, thin coat of clean glass. Grain size 1 mm.  
Photo Number: S-73-18717



71044,2

Basalt  
10 particles, 2.934 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly  
Color: Gray (N4)  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaque  
Remarks: Some are vuggy (3), most are dense (7). Grain size less than 1 mm.  
Photo Number: S-73-18718



71044,3  
Basalt  
5 particles, 1.257 grams

Coherence: Tough  
Shape: Angular, no Vugs  
Surface: Dust adhering  
Color: Gray (N4)  
Mineralogy: Aphanitic - too fine-grained to determine mineralogy.  
Remarks: Similar to 71048.  
Photo Number: S-73-18719



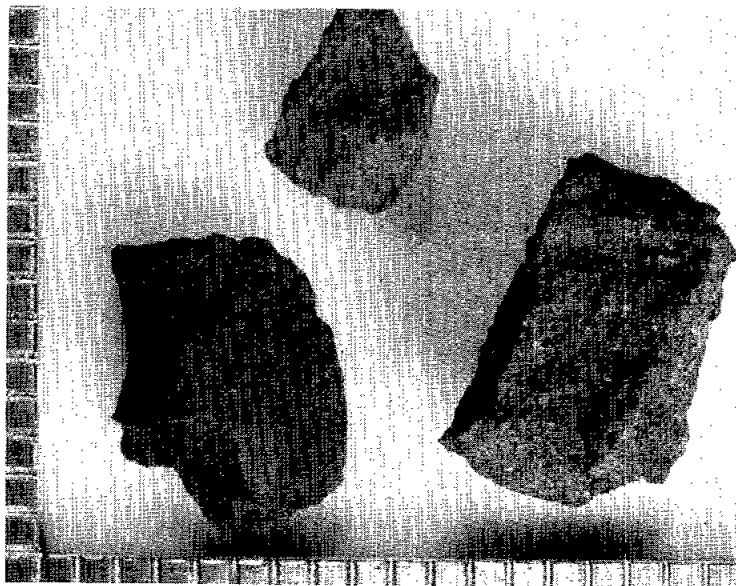
71044,4  
Basalt  
1 particle, 0.248 grams

Coherence: Tough  
Shape: The broken area between many large (5 mm) vesicles  
Color: Dark gray  
Mineralogy: Aphanitic  
Photo Number: S-73-18720



71044,5  
Devitrified Glass  
3 particles, 0.703 grams

Coherence: Tough  
Shape: Angular, blocky  
Surface: Dust adhering  
Color: Gray  
Mineralogy: Aphanitic  
Remarks: These may be very fine-grained basalts  
Photo Number: S-73-18721



71044,6  
Soil Breccia  
1 particle, 0.462 grams

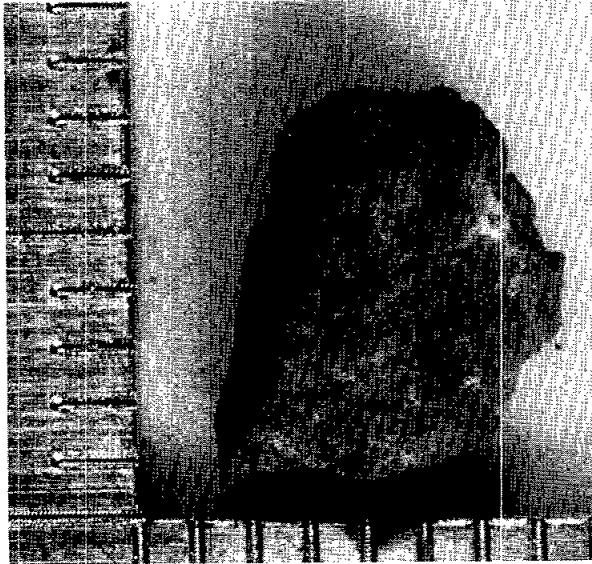
Coherence: Friable and soft  
Shape: Rounded  
Color: Light gray  
Photo Number: S-73-18722



71044,7

Anorthositic Breccia  
1 particle, 0.194 grams

Coherence: Tough, annealed texture  
Shape: Subrounded  
Surface: Two zap pits lined with green glass and white spall area  
Color: Whitish gray  
Mineralogy: 80% plagioclase, 20% gray mineral or glass  
Remarks: This particle may be a "norite"  
Photo Number: S-73-18723



71064,1

Basalt  
47 particles, 16.935 grams

Coherence: Coherent  
Shape: Angular to subangular; a few are irregular  
Surface: Rough, granular; some particles vuggy with euhedral needles on plates of basaltic minerals  
Color: Medium gray  
Mineralogy: White plagioclase, cinnamon pyroxene, black lustrous ilmenite in medium to coarse grains are visible in all particles; yellow olivine occurs in some particles -- where present at all it tends to be in clumps; one particle has olivine cemented on one smooth surface  
Photo Number: S-73-18725





71064,2

Basalt

30 particles, 9.815 grams

Coherence: Coherent

Shape: Angular, subangular, irregular

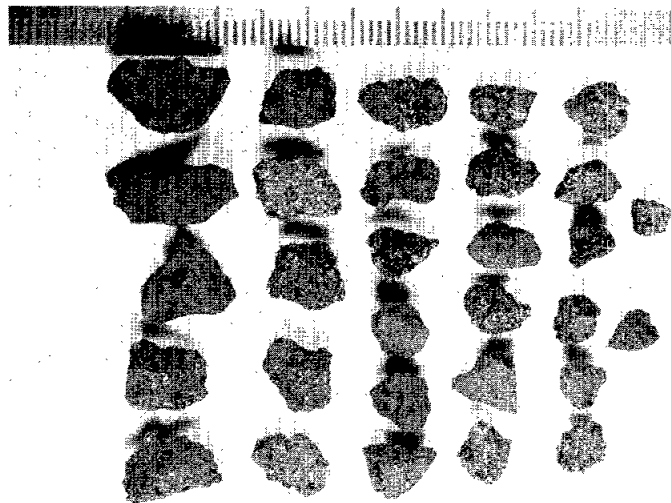
Surfaces: Largely coated with adhering dust which smooths the grainy rock surface

Color: Medium gray

Mineralogy: Same as in 71064,1 but having fewer vugs

Remarks: These particles are similar in composition to those of 71064,1, but are finer-grained and more liberally coated with dust

Photo Number: S-73-18726



71064,3

Aphanitic to very fine-grained basalts(?)

17 particles, 5.200 grams

Coherence: Tough

Shape: Angular, blocky

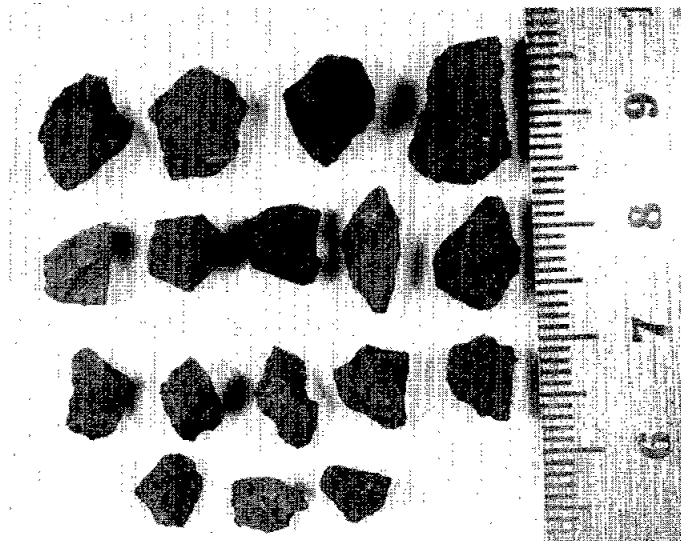
Surface: Generally smooth; some surfaces have microgrooving, others shallow rounded cavities. Dust adhering to most surfaces.

Color: Medium dark gray

Mineralogy: Indistinguishable in most cases; a few are dense ilmenite-rich basalts with cavity walls lined with flat lying, felty ilmenite needles.

Remarks: A few of these may be glass matrix breccias but they are without obvious clasts.

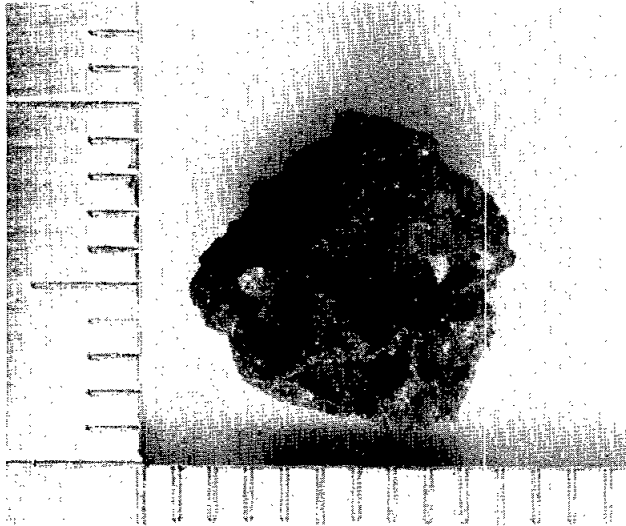
Photo Number: S-73-18727



71064,4

Glass, Devitrified  
1 particle, 0.271 grams

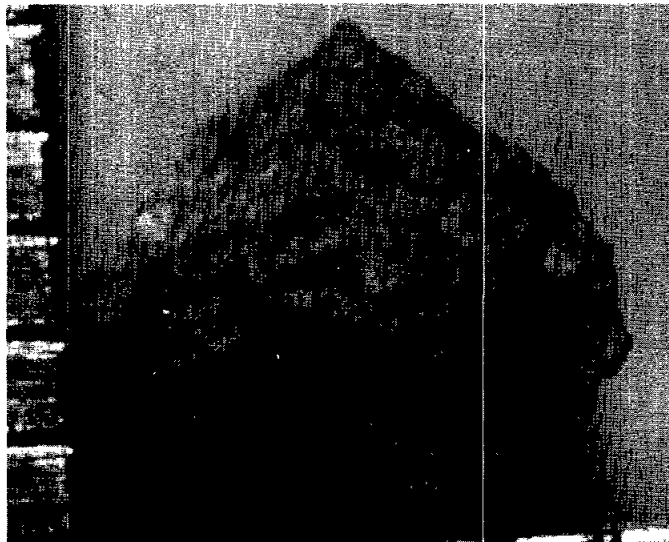
Coherence: Brittle  
Shape: Angular  
Surface: Vesicular on one surface; large smooth rounded cavities  
pitted with minute gas cavities; dust coated on other side.  
Color: Dark gray; resinous luster  
Photo Number: S-73-18728



71064,5

Shocked Plagioclase-Rich Rock  
1 particle, 0.091 grams

Coherence: Coherent  
Shape: Subangular  
Surface: Fresh surfaces chalky to sugary; two surfaces dust coated;  
no zap pits observed.  
Color: Off-white  
Mineralogy: 80% plagioclase, 18% yellow mafic silicate, 2% opaques.  
Remarks: This particle appears to have been shocked in situ. The  
plagioclase is partly chalky (maskelynite?) but yellow silicates  
tend to retain their shape and fresh vitreous appearance. They  
and the opaques are interstitial to the plagioclase.  
Photo Number: S-73-18729



71064,6

Breccia; largely aphanitic (glassy?) material  
enclosing small clasts and coated with soil  
4 particles, 1.092 grams

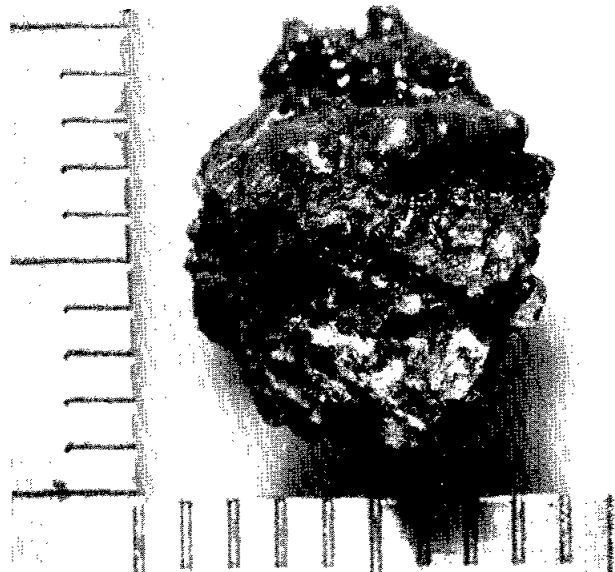
Coherence: Tough  
Shape: Irregular  
Surface: Rough  
Color: Light gray  
Mineralogy: Indeterminate  
Photo Number: S-73-18730



71134,1

Basalt  
1 particle, 0.325 grams

Coherence: Coherent  
Shape: Subrounded; roughly lenticular  
Surface: Partially coated with dark brown glass that is partly vitreous and partly devitrified. Fresh fractures on bottom surface show microslickensides on some areas.  
Mineralogy: Plagioclase (white laths), pyroxene (cinnamon grains), and ilmenite (lustrous black); interstitial. Grain sizes are: plagioclase  $\sim 0.1$  mm, pyroxene  $\sim 0.08$  mm, and ilmenite  $\sim 0.06$  mm. Zap pits present in glassy crust.  
Photo Number: S-73-19432

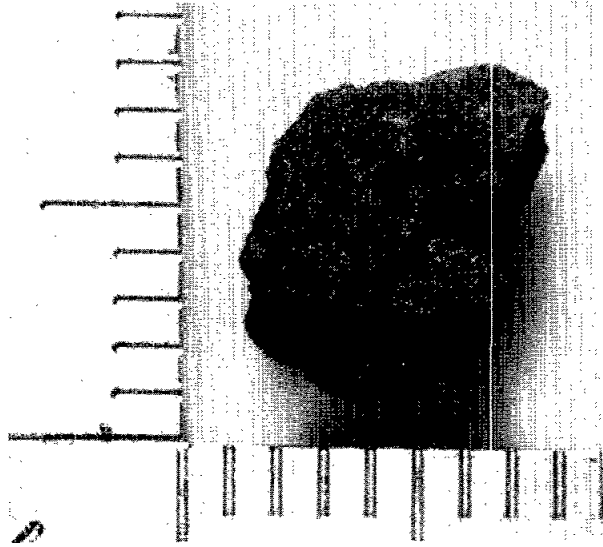


71134,2

Basalt

1 particle, 0.291 grams

Coherence: Coherent; some small non-penetrative fractures  
 Shape: Rounded  
 Surface: Grainy; with one 2.0 mm cavity partly lined with ilmenite needles up to 1 mm long.  
 Color: Dark brownish gray  
 Mineralogy: Ilmenite-rich; black ilmenite and cinnamon pyroxene are the main visible minerals; plagioclase inconspicuous but probably present.  
 Remarks: Average grain size <0.02 mm.  
 Photo Number: S-73-19431



71134,3

Soil Breccia

2 particles, 0.210 grams

Coherence: Friable  
 Shape: Rounded  
 Surfaces: One surface on each particle is partially coated with black glass.  
 Color: Matrix: medium gray; clasts mainly white, light yellow and light brown; a few are dark gray  
 Mineralogy: Aggregated regolith materials; clasts are small, angular to rounded and appear to include both single mineral and lithic fragments.  
 Photo Number: S-73-19430

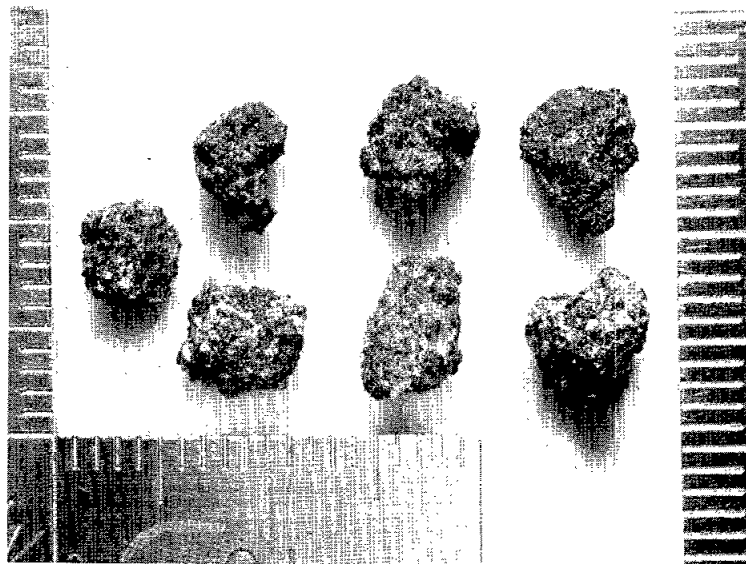


71154,1

Basalt

7 particles, 1.095 grams

Coherence: Tough  
Shape: Angular  
Surface: Fresh  
Color: Gray  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaques  
Remarks: Average grain size is  $\approx 2$  mm.  
Photo Number: S-73-19428

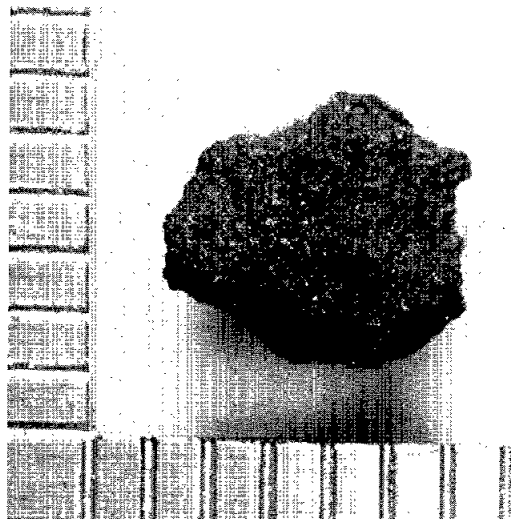


71154,2

Basalt

1 particle, 0.105 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly  
Color: Dark gray (N4)  
Mineralogy: Aphanitic, many very small vesicles (less than 1mm)  
Photo Number: S-73-19426



71154,3

Breccia

1 particle, 0.103 grams

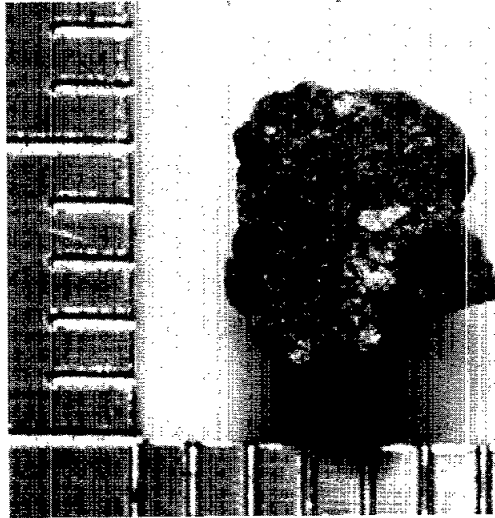
Coherence: Friable

Shape: Angular

Color: Gray

Mineralogy: 30% clasts of basalt and of plagioclase and glass and  
70% dark aphanitic matrix.

Photo Number: S-73-19425



71504,1

Basalt

9 particles, 2.790 grams

Coherence:

Shape: Angular, 10% Vugs

Color: Gray

Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaques

Remarks: Some of these fragments contain a trace of olivine.

Grain size ~1 mm.

Photo Number: S-73-18611



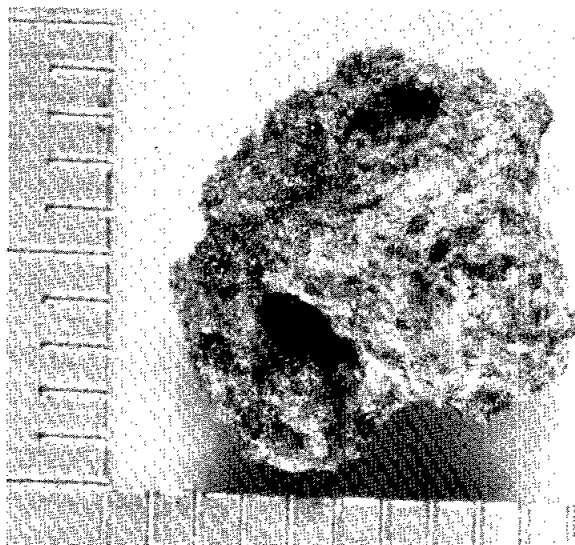
71504,2  
 Basalt  
 17 particles, 4.127 grams

Coherence:   
 Shape: Subrounded  
 Surface: Some are coated with glass  
 Color: Gray  
 Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaques  
 Remarks: Some are mottled, some are almost aphanitic. Grain  
 size less than 1 mm.  
 Photo Number: S-73-18612



71504,3  
 Basalt  
 1 particle, 0.394 grams

Coherence: Coherent to friable  
 Shape: Angular, 20% Vugs  
 Color: Greenish  
 Mineralogy: 35% plagioclase, 20% brown pyroxene, 35% olivine, 10% opaques  
 Remarks: Grain size approximately 2 mm. This is a different kind of  
 basalt  
 Photo Number: S-73-18613



71504,4

Anorthositic Breccia  
2 particles, 0.575 grams

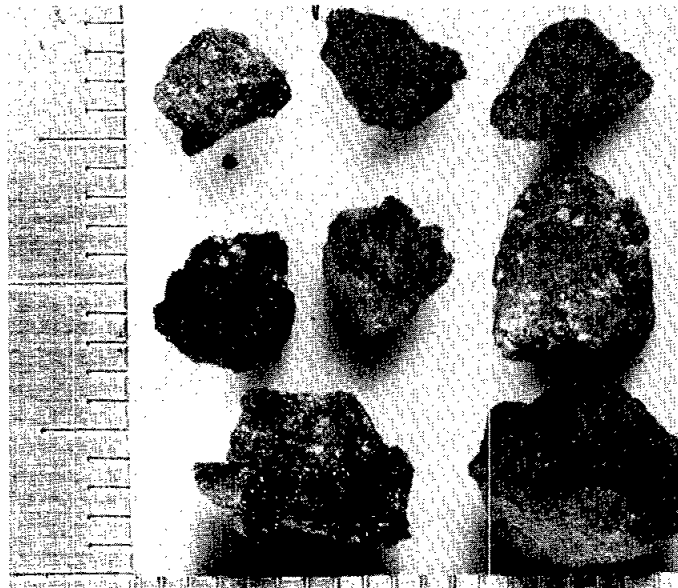
Coherence: Tough, annealed texture  
Shape: Rounded  
Surface: 10% glass coated  
Color: White with 10% gray inclusions  
Mineralogy: 90% plagioclase, 10% gray mineral or glass  
Photo Number: S-73-18614



71504,5

Glass matrix breccia  
8 particles, 1.086 grams

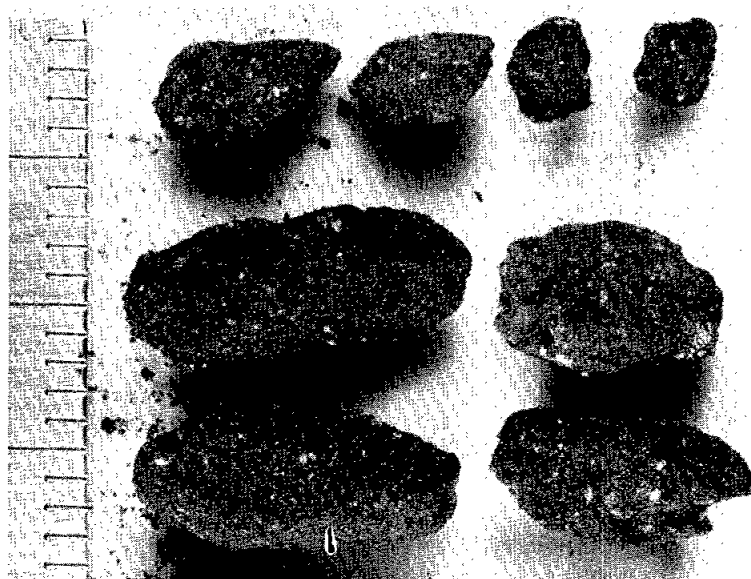
Coherence: Tough  
Shape: Angular  
Surface: 5% vitreous glass coating  
Color: Gray  
Mineralogy: 1 mm clasts of white plagioclase (10%) in dark  
aphanitic matrix  
Photo Number: S-73-18615





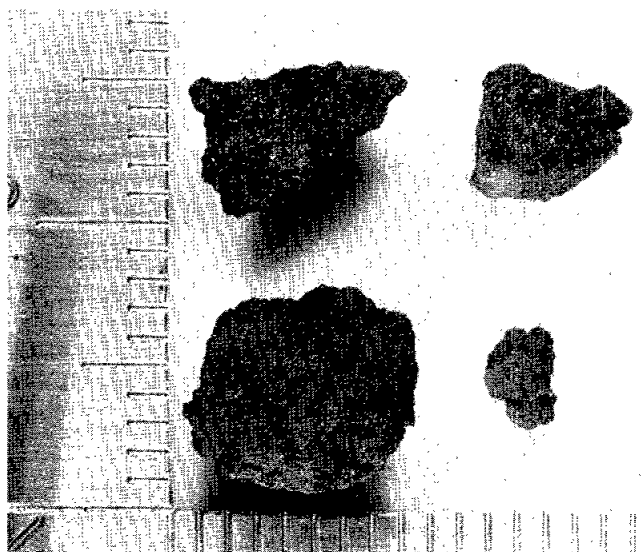
71504,6  
Soil Breccia  
7 particles, 1.137 grams

Coherence: Very friable  
Shape: Rounded  
Surface: Grainy  
Color: Gray  
Mineralogy: (1 mm) clasts of plagioclase, pyroxene and olivine in  
95% dark soil matrix  
Remarks: No glass or glass coating  
Photo Number: S-73-18616



71504,7  
Devitrified Glass  
4 particles, 0.804 grams

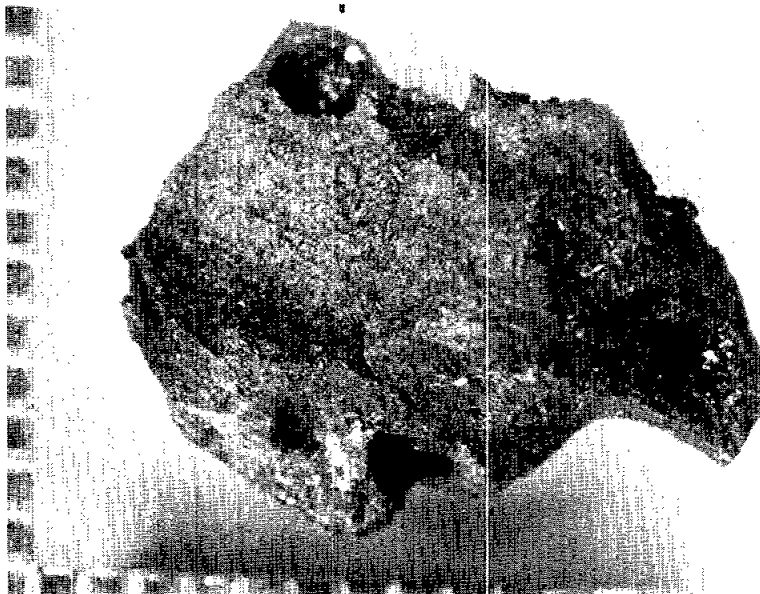
Coherence: Tough  
Shape: Irregular  
Color: Dull black  
Remarks: No vesicles, these fragments may be formed by very  
rapid cooling as near the margin of a lava flow. Similar to  
aa-aa.  
Photo Number: S-73-18617



71504,8

Basalt, aphanitic to glassy  
1 particle, 0.954 grams

Coherence: Tough  
Shape: Angular, large vesicles (2mm)  
Color: Dark gray to black  
Mineralogy: Fine laths of ilmenite  
Remarks: Probably has higher ilmenite content than most basalts  
Photo Number: S-73-18618



72134,1

Agglutinates  
2 particles, 0.1 grams

Coherence: Delicate  
Shape: Irregular  
Color: Gray  
Mineralogy: 40% glass, 60% gray matrix breccia  
Photo Number: S-73-21798



72134,2

Basalt

27 particles, 5.55 grams

Coherence: Tough  
Shape: Angular, 5% Vugs  
Color: Gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: These range in grain size from 0.1 - 0.5 mm. Two particles  
in this group have trace olivine. Some of this group are almost  
aphanitic.  
Photo Number: S-73-21799

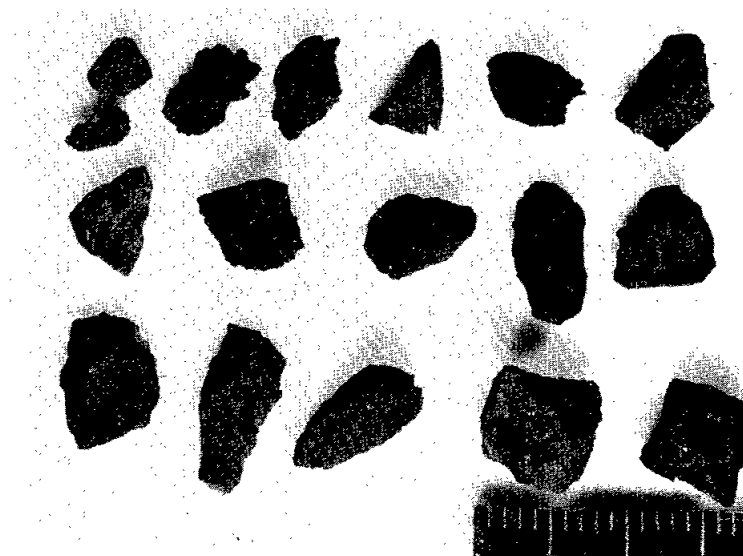


72134,3

Basalt

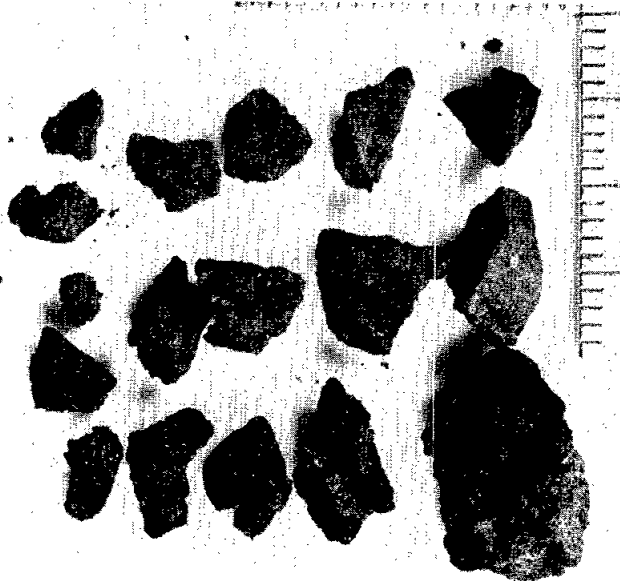
17 particles, 4.05 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: Aphanitic  
Remarks: These basalts may be devitrified glass.  
Photo Number: S-73-21800



72134,4  
Breccia  
13 particles, 2.83 grams

Coherence: Friable  
Shape: Irregular  
Color: Dark gray  
Mineralogy: All matrix, few clasts  
Remarks: These breccias appear very similar to the aphanitic  
basalts in this group. Occasional clast of the more coarse  
basalts. Some of these are similar to 72135.  
Photo Number: S-73-21801



72144,1  
Basalt  
1 particle, 0.58 grams

Coherence: Tough  
Shape: Subrounded  
Surface: Fresh  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: 1 mm grain size  
Photo Number: S-73-21808



72144,2

Anorthositic Breccia  
1 particle, 0.12 grams

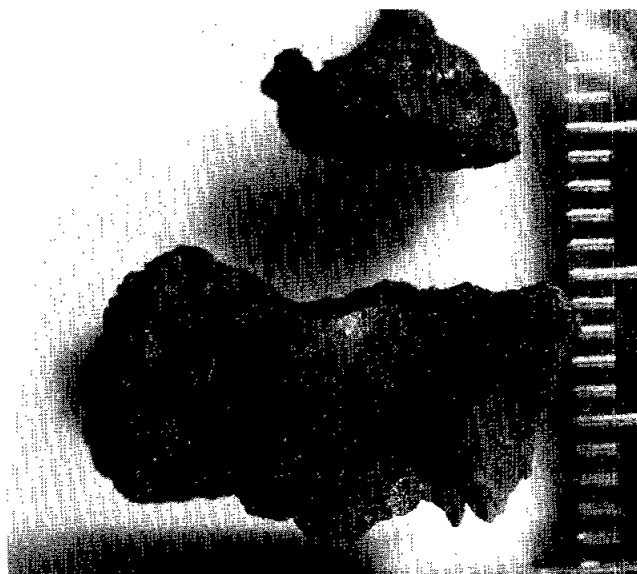
Coherence: Tough  
Shape: Smooth on three sides, broken on one side  
Color: Chalky white  
Mineralogy: 95% plagioclase, 5% gray glass  
Remarks: Very fine-grained, shocked  
Photo Number: S-73-21809



72144,3

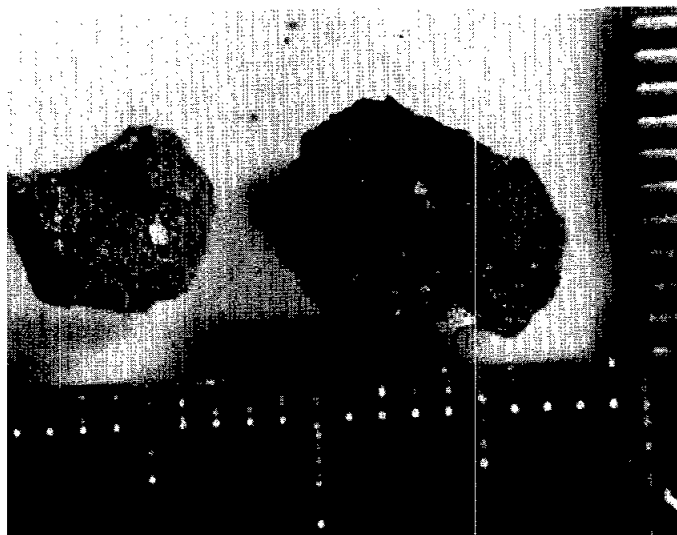
Vesicular glass  
2 particles, 1.07 grams

Coherence: Tough  
Shape: Irregular  
Surface: One side each particle has original glass surface with  
old zap pits  
Color: Black  
Mineralogy: Glass, many large vesicles.  
Photo Number: S-73-21810



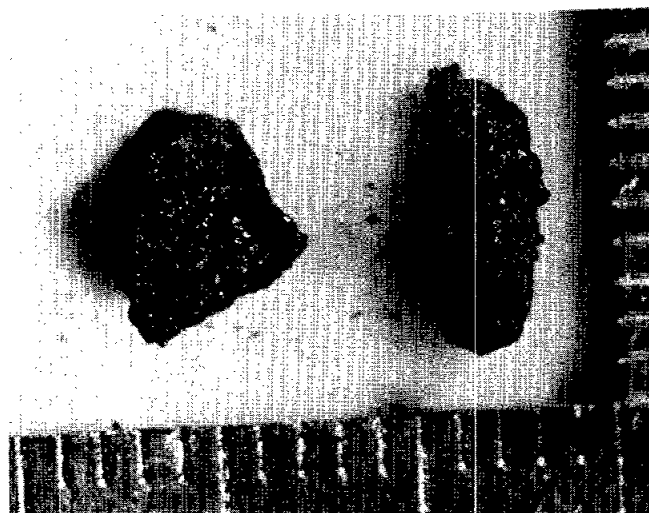
72144,4  
Breccia  
2 particles, 0.52 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: 80% dark, fine-grained matrix, 20% white clast 1-2 mm  
Photo Number: S-73-21811



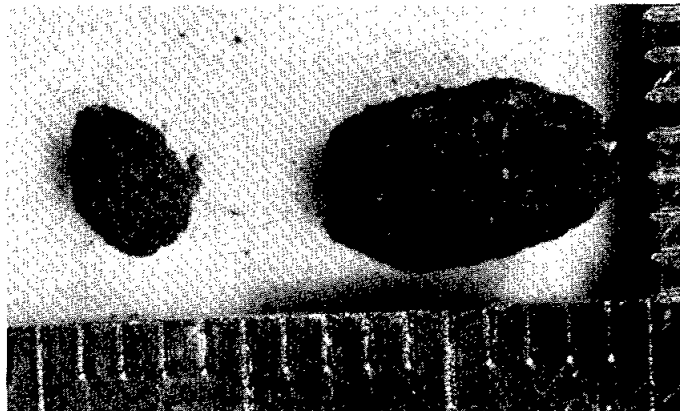
72144,5  
Agglutinates  
2 particles, 0.15 grams

Coherence: Delicate  
Shape: Irregular  
Color: Gray  
Mineralogy: 50% glass, 50% soil breccia  
Photo Number: S-73-21812



72144,6  
Soil Breccias  
2 particles, 0.11 grams

Coherence: Very friable  
Shape: Rounded  
Color: Light gray  
Mineralogy: Aphanitic  
Photo Number: S-73-21813



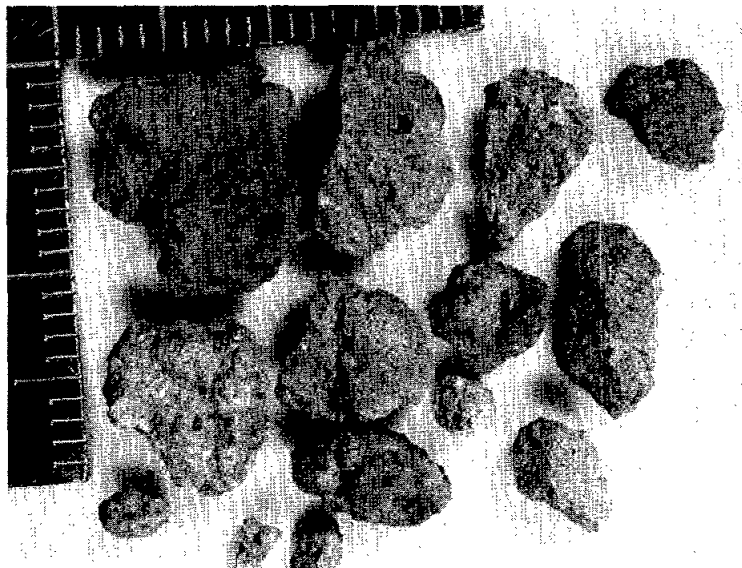
PRELIMINARY DESCRIPTION  
Not yet dusted, photographed or subdivided

72164  
0.946 grams

3 dark breccia fragments  
2 gray breccia fragments with white clasts  
(largest fragment has 75-80% light gray to white clasts)

72224,1  
Breccias  
12 particles, 1.96 grams

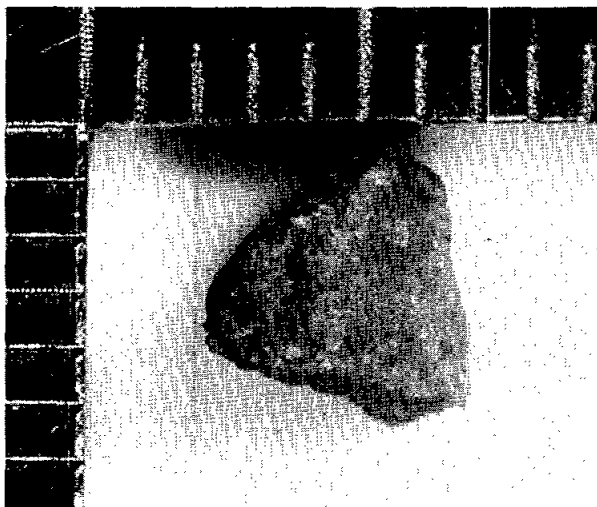
Coherence: Friable  
Shape: Subangular  
Color: Light gray  
Mineralogy: 90% aphanitic light gray matrix, 10% aphanitic dark gray clasts (1 mm)  
Remarks: All these are the same  
Photo Number: S-73-25433



72224,2

Feldspathic Basalt  
1 particle, 0.09 grams

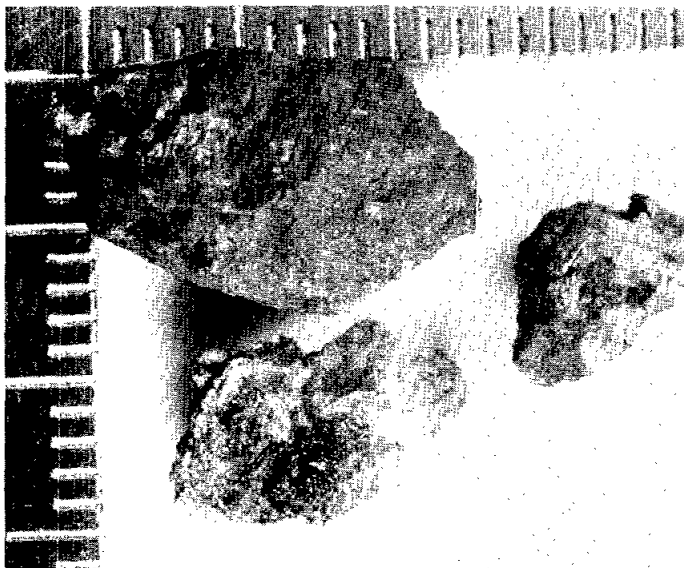
Coherence: Tough  
Shape: Angular  
Color: Light tan  
Mineralogy: 80% plagioclase, 1% opaques, 19% light gray mineral  
(orthopyroxene?)  
Photo Number: S-73-25434



72224,3

Breccia  
3 particles, 1.55 grams

Coherence: Tough  
Shape: Marbled texture  
Color: Blue gray and white  
Mineralogy: 60% dark blue gray (aphanitic) and 40% chalky white  
Remarks: Probably feldspathic  
Photo Number: S-73-25435

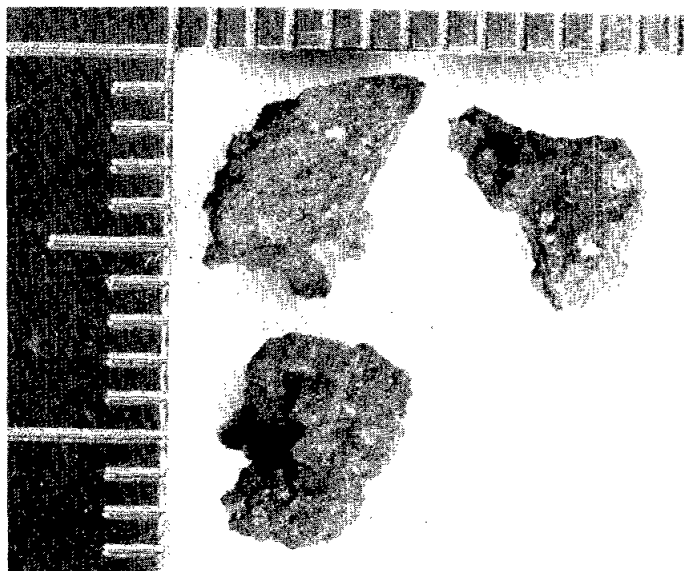




72224,4

Anorthosite(?)  
3 particles, 0.26 grams

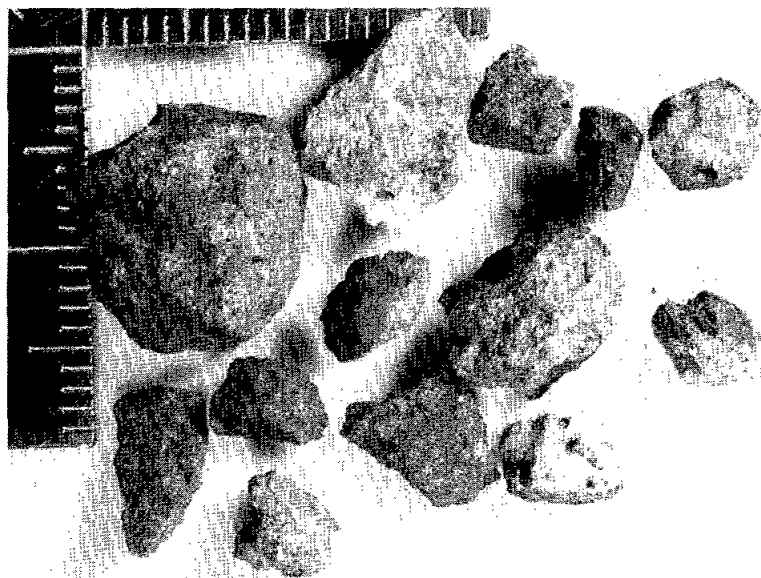
Coherence: Tough  
Shape: Angular  
Color: Dark blue gray  
Mineralogy: 90% dark gray mineral (probably plagioclase), 10% chalky white plagioclase.  
Remarks: Grain size ~1 mm (cleavages suggest it is holocrystalline)  
Photo Number: S-73-25436



72224,5

Feldspathic Breccia  
13 particles, 3.46 grams

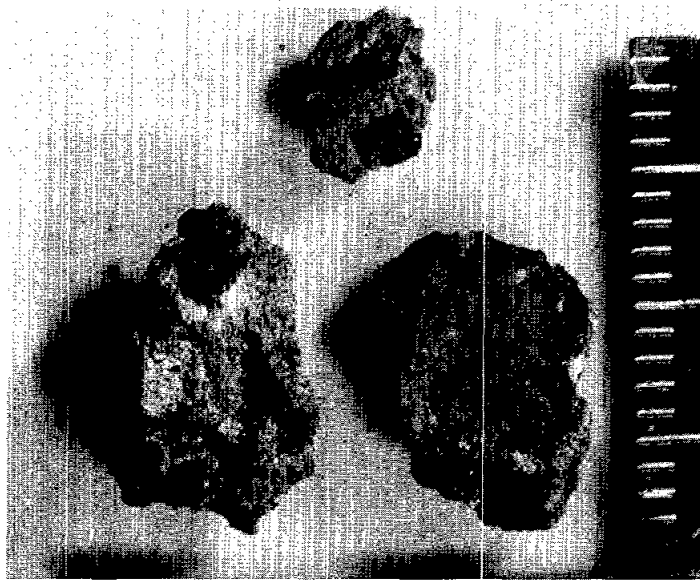
Coherence: Tough  
Shape: Angular to subrounded  
Surface: Often dirty  
Color: Tannish gray  
Mineralogy: 5% olivine, 25% gray mineral, 70% plagioclase  
Remarks: Annealed texture - probably metamorphic  
One particle is almost all white plagioclase,  
Photo Number: S-73-25437



72244,1

Plagioclase-Rich Breccias  
3 particles, 1.08 grams

Coherence: Soft and friable  
Shape: Angular, marbled texture.  
Color: Light gray to white  
Mineralogy: 80% plagioclase, 20% clasts of gray glass(?)  
Photo Number: S-73-21815



72244,2

Anorthositic Breccias  
7 particles, 0.53 grams

Coherence: Tough  
Shape: Angular  
Surface: One zap pit on one particle, glass lined  
Color: Light gray  
Mineralogy: 95 - 100% plagioclase, possible 10% orthopyroxene  
Remarks: Annealed texture  
Photo Number: S-73-21816



72244,3

Devitrified, Anorthositic Glass  
6 particles, 0.52 grams

Coherence: Tough  
Shape: Blocky and angular  
Color: Light gray  
Mineralogy: 90% plagioclase  
Photo Number: S-73-21817



72244,4

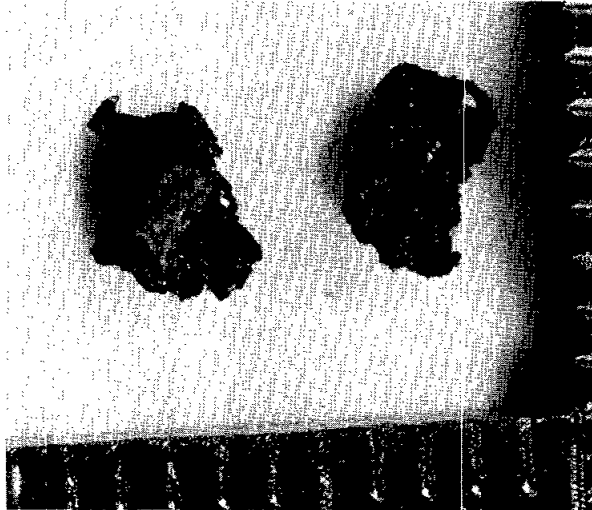
Breccia  
8 particles, 1.76 grams

Coherence: Friable to coherent  
Shape: Angular  
Color: Light gray  
Mineralogy: 90% plagioclase, 10% gray mineral, orthopyroxene(?)  
Remarks: One particle is subrounded  
Photo Number: S-73-21818



72244,5  
Agglutinate  
2 particles, 0.02 grams

Coherence: Delicate  
Shape: Irregular  
Color: Gray  
Mineralogy: 20% glass, 80% soil containing 60% plagioclase  
Remarks: Probably one particle originally.  
Photo Number: S-73-21819



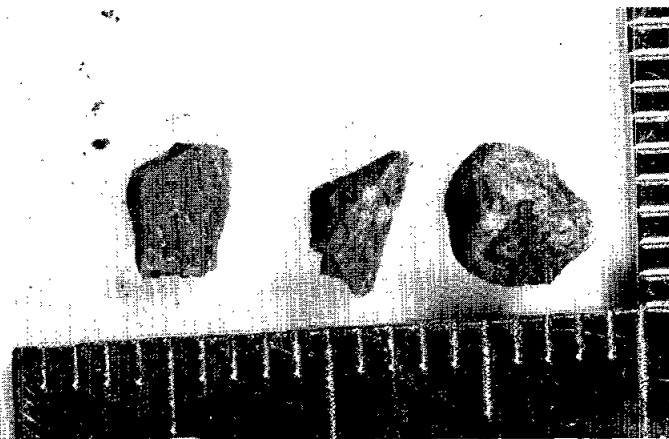
72264,1  
Agglutinate  
4 particles, 0.67 grams

Coherence: Delicate  
Shape: Irregular  
Color: Dark gray  
Mineralogy: 50% vesicular glass, 50% dark gray matrix breccia  
Photo Number: S-73-21803



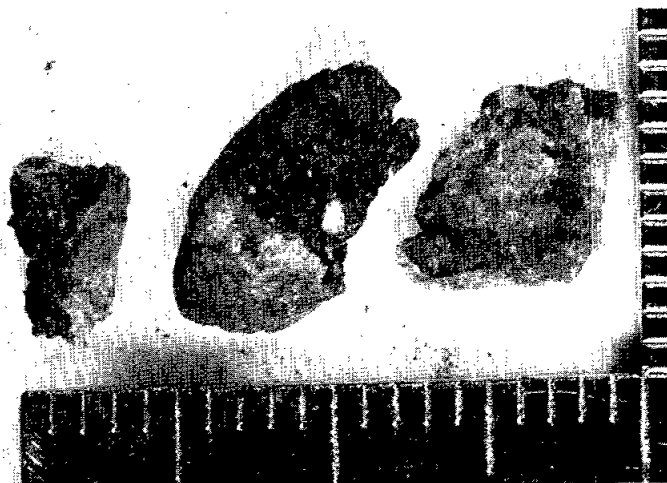
72264,2  
Anorthosite  
3 particles, 0.18 grams

Coherence: Tough  
Shape: Blocky, one particle rounded, other two angular  
Color: Light gray  
Mineralogy: 90% plagioclase, 8%  $MgAl_2O_4$ (?), 2% olivine  
Remarks:  $MgAl_2O_4$  is groups of minute pink minerals in one particle only. One particle is rounded and has three zap pits.  
Photo Number: S-73-21804



72264,3  
Breccias  
3 particles, 0.58 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: Dark gray matrix, probably devitrified glass (80%),  
20% white clasts  $\approx$  1 mm size  
Photo Number: S-73-21805



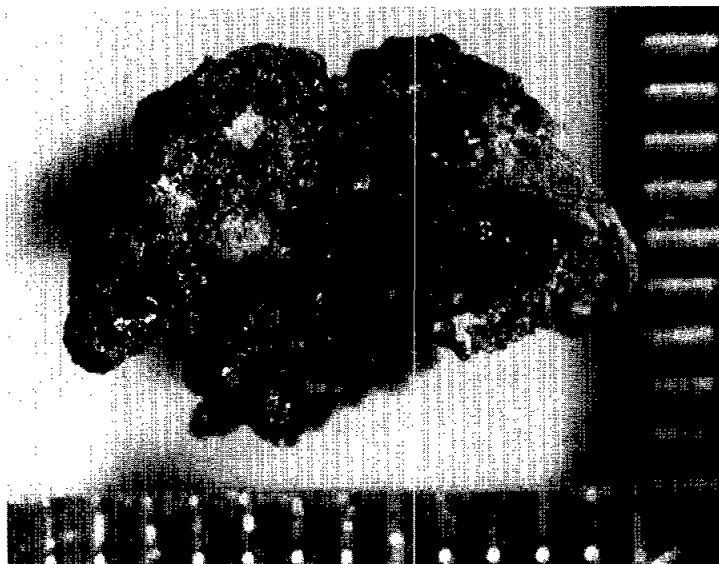
72264,4  
Breccias  
14 particles, 2.84 grams

Coherence: Fragile  
Shape: Vary from angular to rounded  
Color: Light gray to white  
Mineralogy: 85% plagioclase, 15% gray mineral or glass  
Remarks: Seven particles have marked gray and light texture.  
Highly shocked and partially melted in some cases. Few  
large crystals of plagioclase.  
Photo Number: S-73-21806



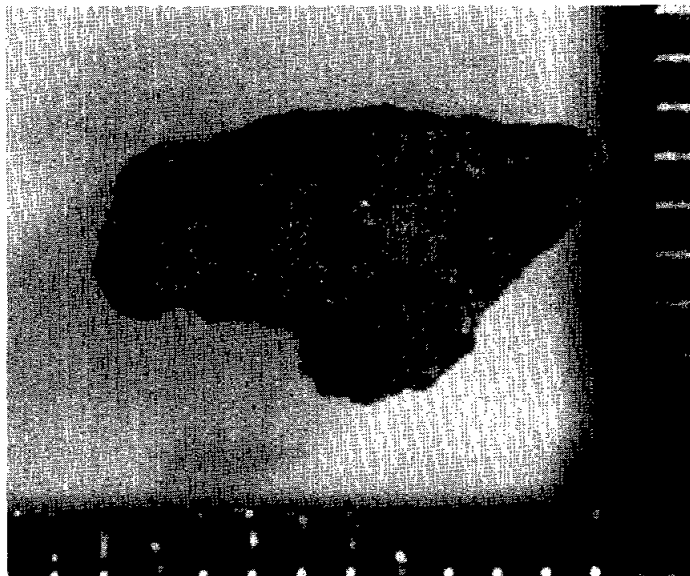
72324,1  
Agglutinate  
1 particle, 0.28 grams

Coherence: Delicate  
Shape: Irregular  
Color: Dark gray  
Mineralogy: 40% black shiny glass, 60% dark gray matrix  
Photo Number: S-73-21821



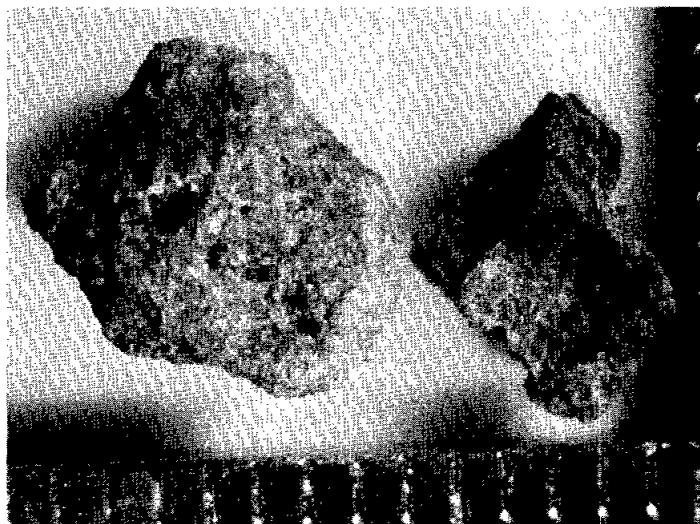
72324,2  
Breccia  
1 particle, 0.23 grams

Coherence: Delicate  
Shape: Irregular  
Color: White  
Mineralogy: 70% plagioclase, 30% orthopyroxene(?)  
Remarks: Layered mixture of vuggy white mineral layers and  
white glass layers  
Photo Number: S-73-21822



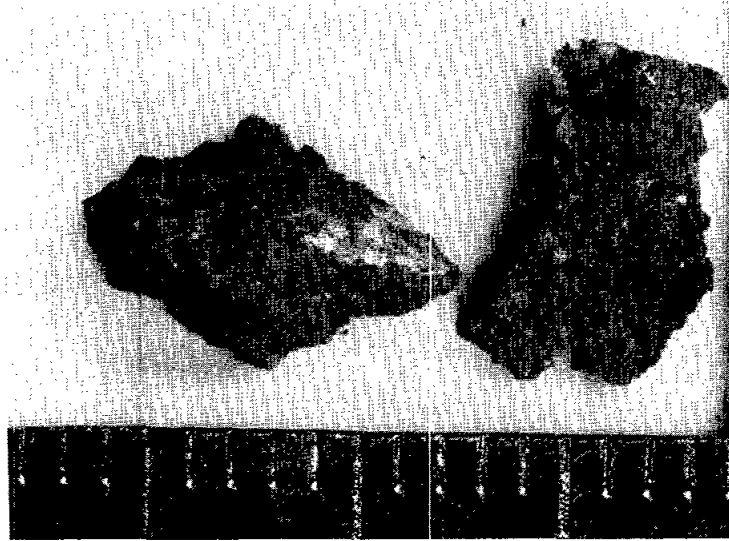
72324,3  
Anorthositic Breccia  
2 particles, 0.45 grams

Coherence: Tough  
Shape: One angular and the other rounded  
Color: White to light gray  
Mineralogy: 95% plagioclase, 5% gray mineral  
Remarks: 5% vug in the rounded one  
Photo Number: S-73-21823



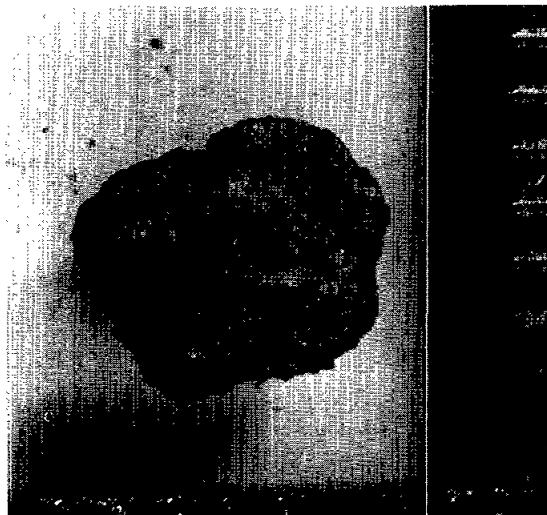
72434,1  
 Blue Gray Breccia  
 2 particles, 0.31 grams

Coherence: Tough  
 Shape: Angular  
 Color: Blue gray  
 Mineralogy: Aphanitic, devitrified glass matrix, plagioclase ~70%  
 Remarks: One particle has 1 mm plagioclase crystals attached  
 on one side. 5% vesicles 0.5 mm  
 Photo Number: S-73-21879



72434,2  
 Feldspathic Basalt  
 1 particle, 0.12 grams

Coherence: Tough  
 Shape: Angular  
 Surface: Freshly broken  
 Color: Light tan  
 Mineralogy: 70% plagioclase (1 mm), 2-3% opaques (0.2 mm), 25% tan  
 to greenish gray pyroxene  
 Remarks: Probable igneous texture. Striation on plagioclase crystals.  
 Photo Number: S-73-21878

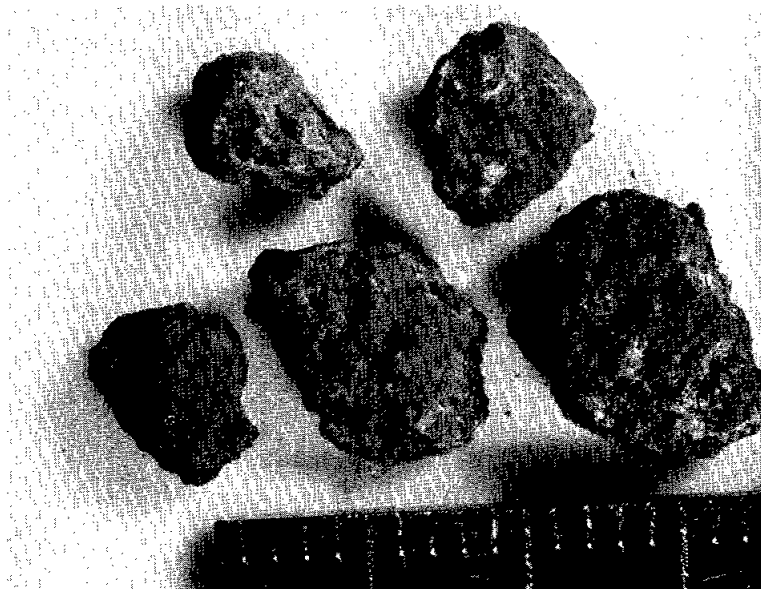




72434,3

Anorthositic Breccia  
5 particles, 1.01 grams

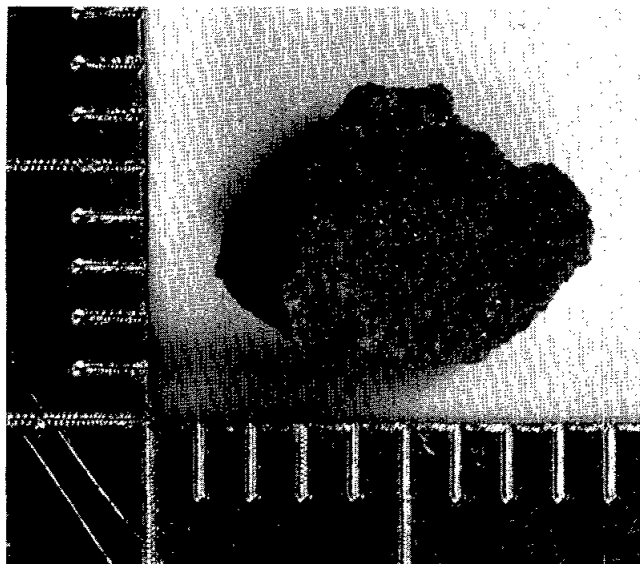
Coherence: Friable  
Surface: Dust covered  
Color: Tan to grayish white  
Mineralogy: 80% plagioclase, 20% gray pyroxene (or glass?)  
Remarks: Some large (1 mm) crystals of plagioclase.  
Photo Number: S-73-21877



72444,1

Basalt  
1 particle, 0.20 grams

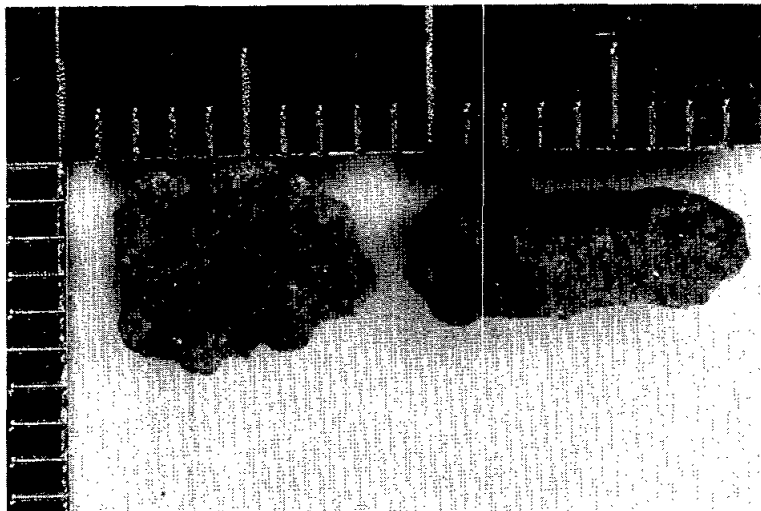
Coherence: Tough  
Shape: Subrounded  
Surface: Glazed or polished(?)  
Color: Dark gray  
Mineralogy: 10% olivine, 10% opaques, 50% light brown pyroxene  
30% plagioclase  
Photo Number: S-73-25444



72444,2

Feldspathic Basalt  
2 particles, 0.26 grams

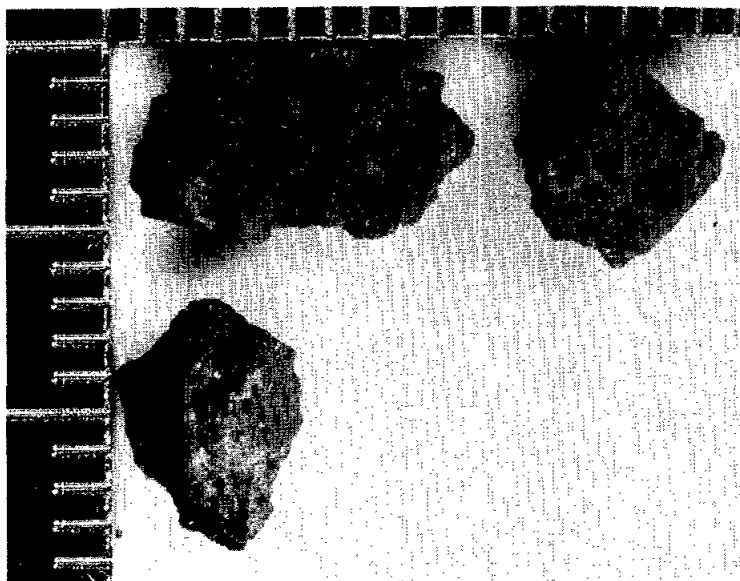
Coherence: Tough  
Shape: Angular  
Color: Tannish white  
Mineralogy: 2% opaques, 70% plagioclase, 30% gray mineral (orthopyroxene?)  
Remarks: Annealed possibly hornfelsic texture. Grain size  $\sim 0.5$  mm.  
Photo Number: S-73-25445



72444,3

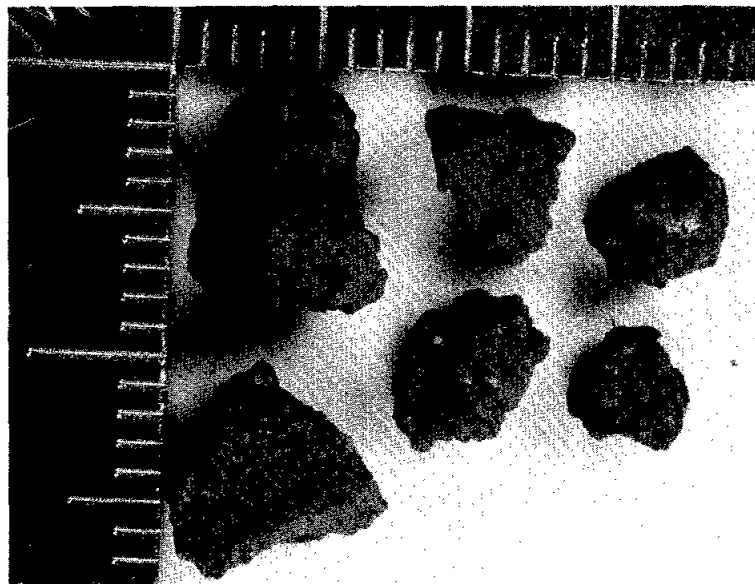
Feldspathic Breccia  
3 particles, 0.44 grams

Coherence: Tough  
Shape: Subrounded to subangular  
Color: Dark blue gray  
Mineralogy: 80% dark blue gray aphanitic matrix (probably devitrified glass) with 20% clasts of white plagioclase  
Photo Number: S-73-25446



72444,4  
Feldspathic Breccia  
6 particles, 1.08 grams

Coherence: Tough  
Shape: Subangular to subrounded  
Color: Light gray  
Mineralogy: 80% glass matrix, 20% gray and white mineral clasts  
Remarks: 5-10% vugs  
Photo Number: S-73-25447



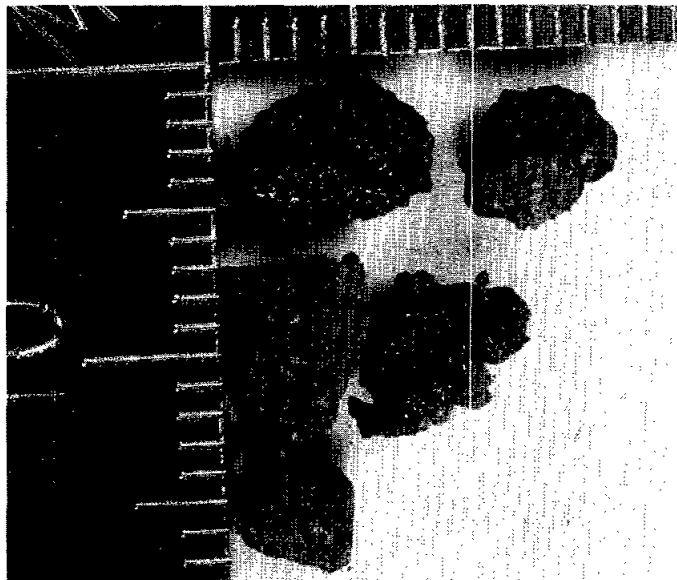
72444,5  
Agglutinates  
5 particles, 0.31 grams

Coherence: Delicate  
Shape: Irregular  
Color: Dark gray  
Mineralogy: 70% vesicular black glass, 30% soil clods  
Photo Number: S-73-25448



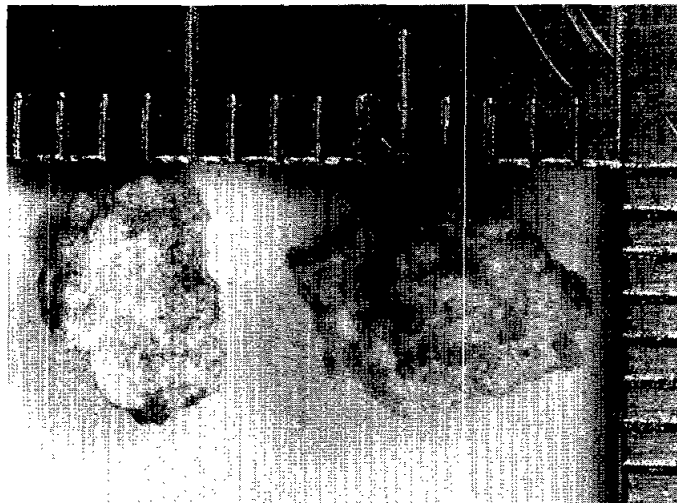
72444,6  
Soil Breccia  
5 particles, 0.44 grams

Coherence: Friable  
Shape: Rounded  
Color: Gray  
Mineralogy: 80% soil clods, with 20% black glass coatings  
Remarks: One particle is more lithified than the other and  
has more feldspar clasts  
Photo Number: S-73-25449



72464,1  
Anorthosites  
2 particles, 0.27 grams

Coherence: Tough  
Shape: Angular  
Color: White  
Mineralogy: 100% plagioclase (80% translucent, 20% chalky white)  
Remarks: Grain size 1-2 mm  
Photo Number: S-73-25439



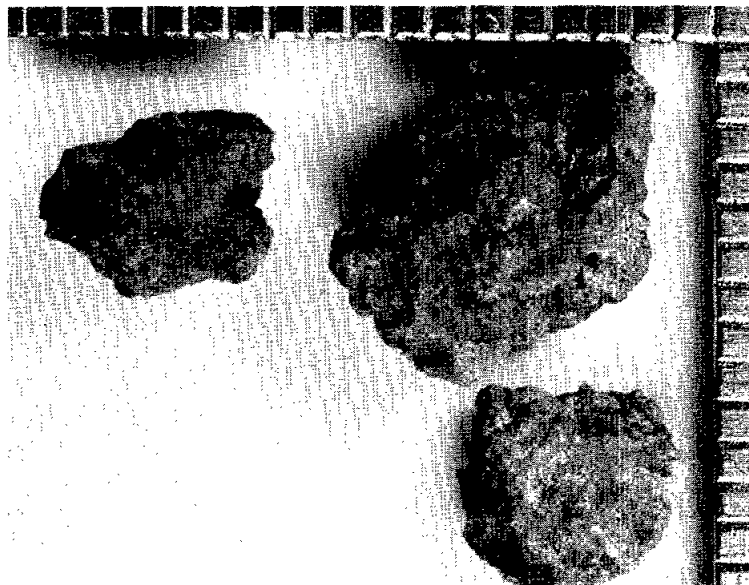
72464,2  
Anorthosite  
1 particle, 0.32 grams

Coherence: Tough  
Shape: Subround  
Surface: Dirty  
Color: White  
Mineralogy: 90% plagioclase, 10% gray mineral (pyroxene?)  
Remarks: Annealed texture  
Photo Number: S-73-25440



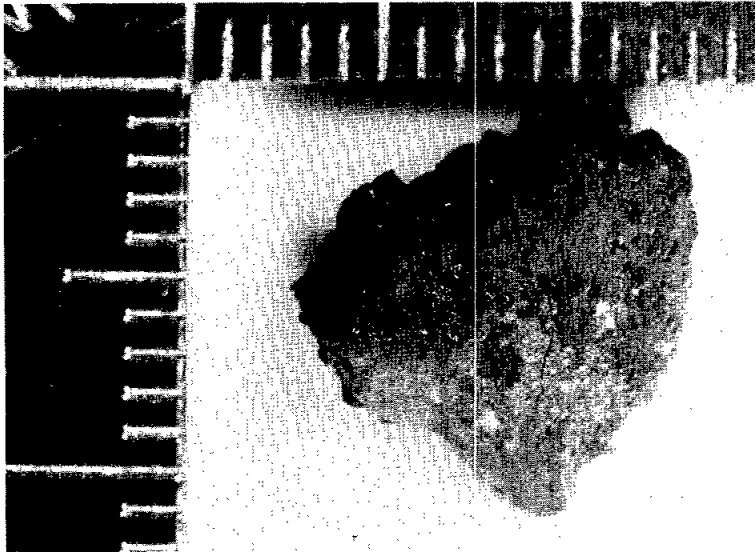
72464,3  
Feldspathic Breccia  
3 particles, 0.55 grams

Coherence: Tough  
Shape: Subangular  
Color: Tannish gray  
Mineralogy: ~70% plagioclase, 2% opaques, 28% gray mineral (orthopyroxene?)  
Remarks: 2% vugs  
Photo Number: S-73-25441



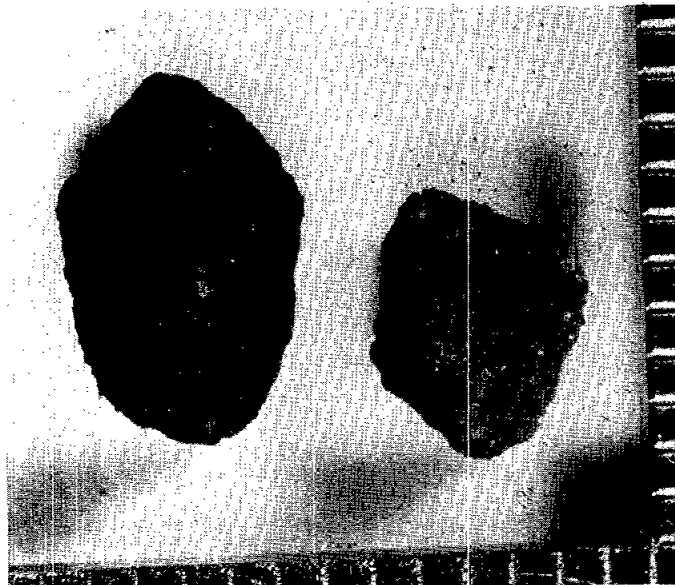
72464,4  
Breccia  
1 particle, 0.58 grams

Coherence: Tough  
Shape: Irregular  
Color: Gray  
Mineralogy: 60% aphanitic gray matrix with 40% small (1 mm)  
white clasts  
Remarks: Vesicular glass coat on one side, small droplets of  
black glass on broken breccia side  
Photo Number: S-73-25442



72504,1  
Soil Breccias  
2 particles, 0.3 grams

Coherence: Friable  
Shape: Rounded  
Surface: Grainy  
Color: One gray, one light gray  
Mineralogy: 40% black glass spheres, 60% fine powder matrix  
Remarks: Many small spheres of glass, unlike other soil breccias  
Photo Number: S-73-21868



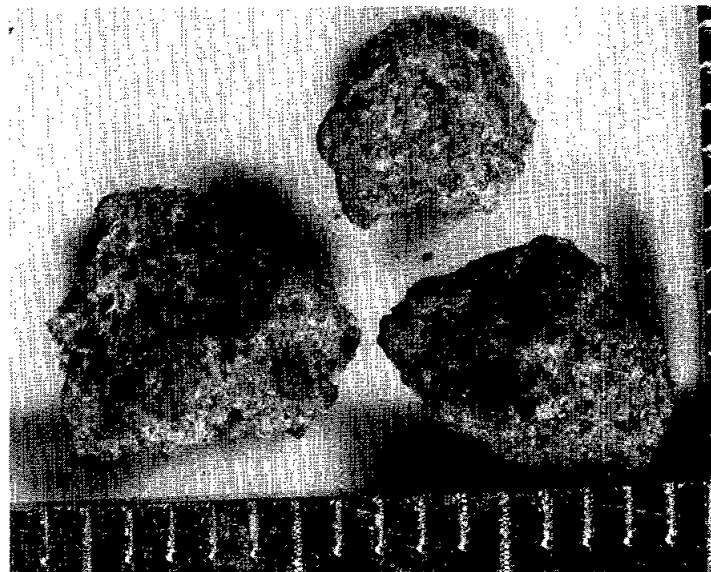
72504,2  
 Agglutinates  
 2 particles, 0.08 grams

Coherence: Delicate  
 Shape: Irregular  
 Color: Black glass, gray breccia  
 Mineralogy: 30% glass, 70% gray matrix breccia  
 Remarks: Probably all one particle originally.  
 Photo Number: S-73-21875



72504,3  
 Feldspathic Basalt  
 3 particles, 0.49 grams

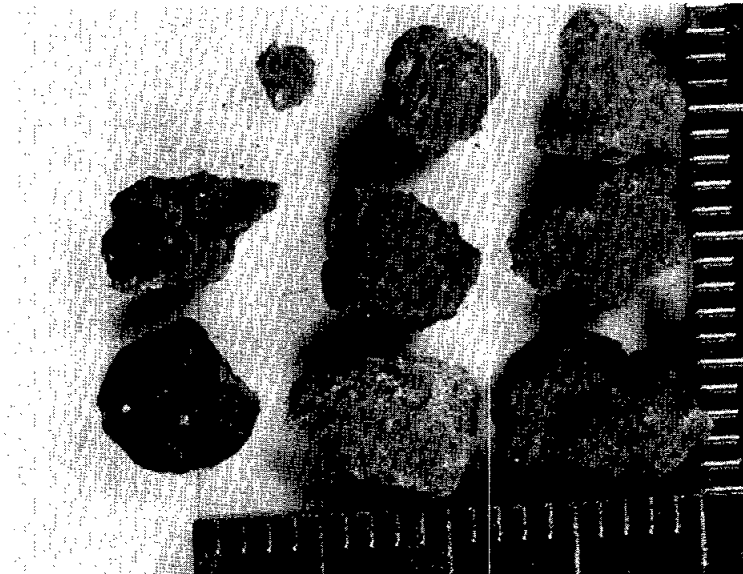
Coherence: Tough  
 Shape: Angular  
 Surface: 10% dirt coated  
 Color: Light tan to white  
 Mineralogy: 80% plagioclase, 5% opaques, 10% gray pyroxene,  
 5% light brown pyroxene  
 Remarks: Grain size ~0.5 - 1 mm. The particles may have a  
 primary igneous texture.  
 Photo Number: S-73-21874



72504,4

Feldspathic Breccia  
8 particles, 1.26 grams

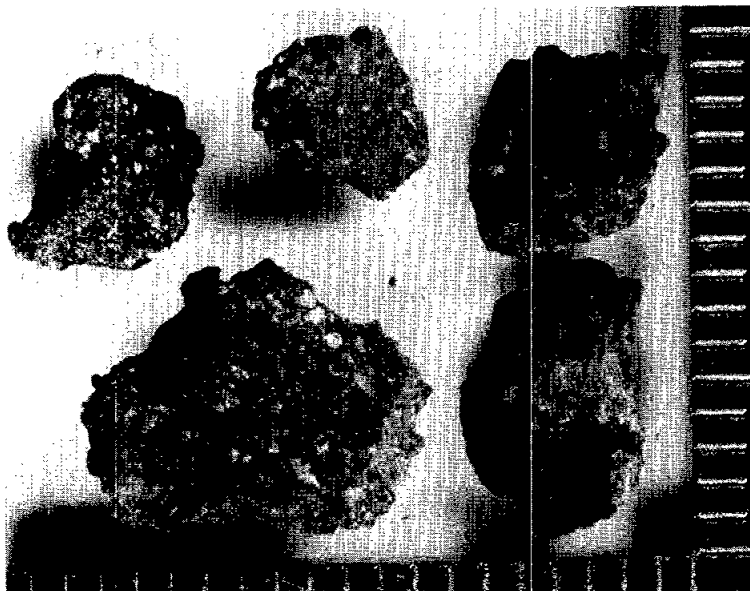
Coherence: Tough, two particles partly fractured  
Shape: Angular, one particle is rounded  
Color: Light tan to white  
Mineralogy: 80% plagioclase, 20% gray mineral (orthopyroxene?)  
Remarks: Grain size 0.5 mm. Zap pits on rounded grains. Annealed possibly hornfelsic texture. 5% vugs in 4 of 8 particles.  
Photo Number: S-73-21873



72504,5

Breccia  
5 particles, 0.83 grams

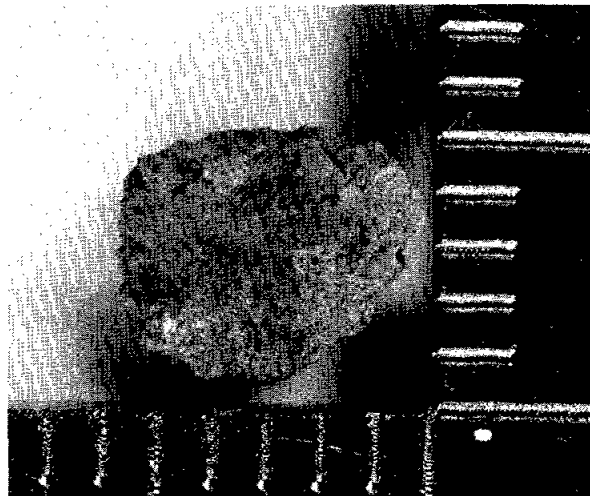
Coherence: Coherent to friable  
Shape: Angular  
Color: Black and white  
Mineralogy: 60% dark gray matrix with 40% white clasts, 0.5 - 2 mm in diameter  
Remarks: Overall composition is highly feldspathic  
Photo Number: S-73-21875





72504,6  
Breccia  
1 particle, 0.08 grams

Coherence: Friable  
Shape: Angular  
Color: White  
Mineralogy: 100% plagioclase  
Remarks: Chalky and aphanitic  
Photo Number: S-73-21871



72504,7  
Feldspathic Breccia  
8 particles, 2.13 grams

Coherence: Tough  
Shape: Angular to rounded  
Color: Light tan to light gray  
Mineralogy: 80% plagioclase, 20% gray mineral grain boundaries  
not visible  
Photo Number: S-73-21870



72504,8

Breccia

9 particles, 2.57 grams

Coherence: Tough to friable  
 Shape: Angular to rounded  
 Color: Blue gray  
 Mineralogy: 80-90% plagioclase, cleavage of plagioclase visible,  
 10% gray mineral (orthopyroxene?)  
 Remarks: Occasional white clast in blue gray matrix. Two particles  
 have glass lined zap pits  
 Photo Number: S-73-21869

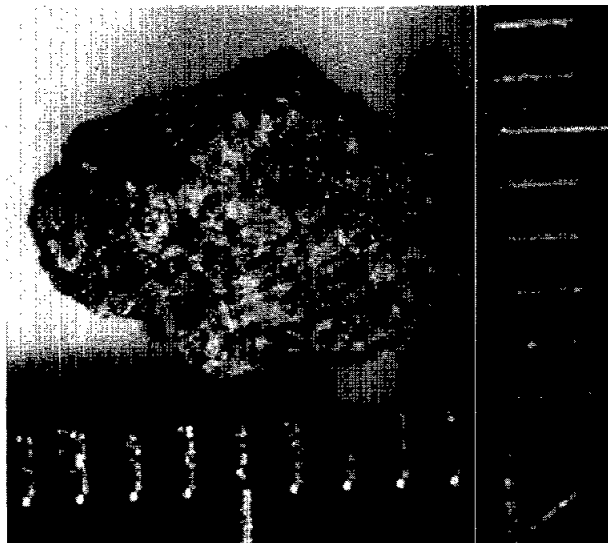


72704,1

Basalt

1 particle, 0.25 grams

Coherence: Tough  
 Shape: Angular  
 Surface: Fresh  
 Color: Brownish gray  
 Mineralogy: 40% plagioclase (1 mm), 40% light brown pyroxene  
 (1 mm), 10% opaque and 10% light green olivine (2 mm)  
 Remarks: Olivine occurs as microphenocrysts  
 Photo Number: S-73-21890



72704,2  
Anorthosite  
3 particles, 0.36 grams

Coherence: Tough  
Shape: Angular  
Surface: 10% dirt covered  
Color: White  
Mineralogy: 100% plagioclase  
Remarks: Grain size 1-2 mm. One particle translucent, one particle cloudy, one particle chalky.  
Photo Number: S-73-21889



72704,3  
Breccia  
4 particles, 1.25 grams

Coherence: Tough  
Shape: Three angular  
Color: Blue gray  
Mineralogy: 80% plagioclase, 20% gray mineral (glass?)  
Remarks: Annealed textures. Few vugs, one zap on rounded particle.  
Photo Numbers: S-73-21888 (large two)  
S-73-21887 (small two)

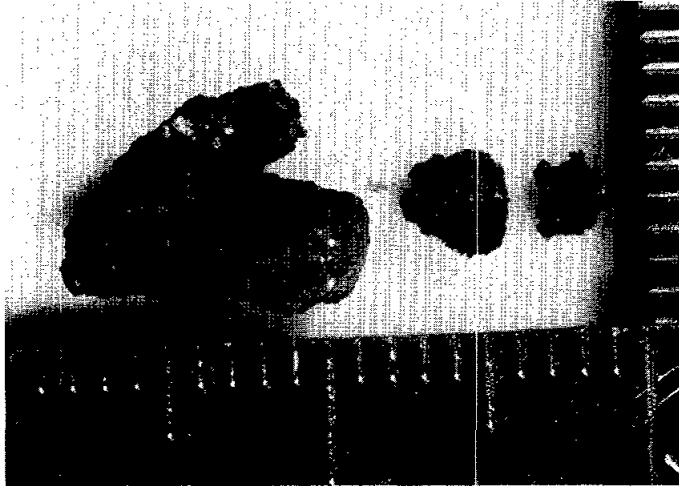


72704,4

Breccia

3 particles, 0.39 grams

Coherence: Delicate  
 Shape: Irregular  
 Color: Dark gray  
 Mineralogy: 90% vesicular glass, 10% white clasts (0.5 mm)  
 Remarks: Similar to agglutinates  
 Photo Number: S-73-21886

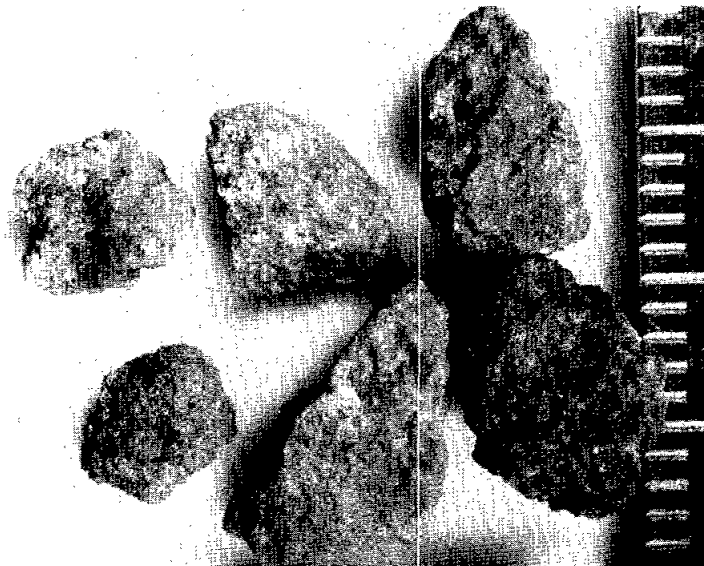


72704,5

Feldspathic Breccias

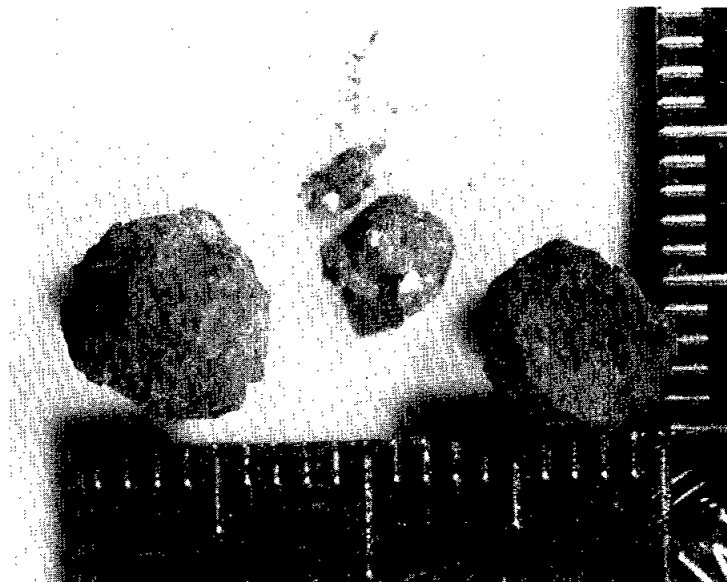
6 particles, 1.57 grams

Coherence: Tough annealed, possibly hornfelsic texture  
 Shape: Angular to subrounded  
 Color: Light tan to gray  
 Mineralogy: 80% plagioclase, 20% gray mineral (orthopyroxene?),  
 2% opaques  
 Remarks: These particles are all a little different from each  
 other. Two of them may be feldspathic basalt. One particle  
 has a long, wormy vug ~1 cm.  
 Photo Number: S-73-21885



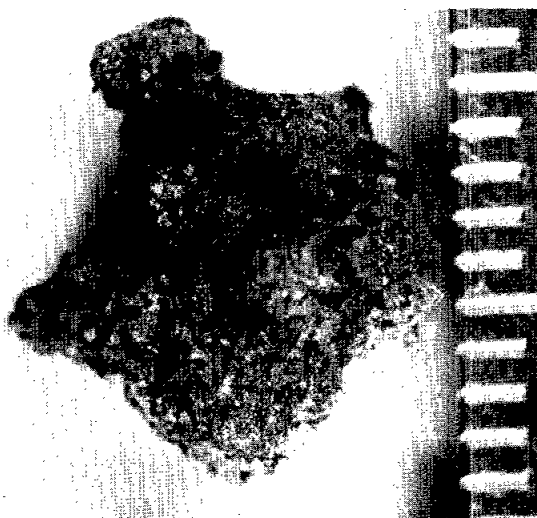
72704,6  
Anorthositic Breccia  
3 particles, 0.72 grams

Coherence: Friable  
Shape: Subangular  
Color: Light gray  
Mineralogy: 80-90% plagioclase, 10% gray mineral  
Remarks: Fine-grained, aphanitic matrix with 10% white  
clasts (0.5 mm).  
Photo Number: S-73-21884



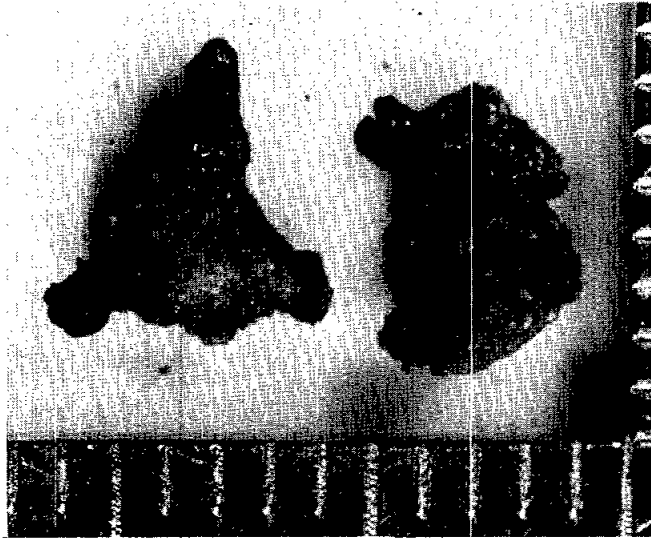
73124,1  
Vesicular Glass  
1 particle, 0.37 grams

Coherence: Tough  
Shape: Irregular  
Surface: Smooth on one side  
Color: Black  
Mineralogy: Glass  
Remarks: 30% vesicles - 0.5 - 2 mm diameter  
Photo Number: S-73-21882



73124,2  
Agglutinate  
2 particles, 0.09 grams

Coherence: Delicate  
Shape: Irregular  
Color: Light gray  
Mineralogy: 90% glass, 10% dirt  
Remarks: These appear to have originally been one piece  
Photo Number: S-73-21881



PRELIMINARY DESCRIPTION  
Not yet dusted, photographed or subdivided

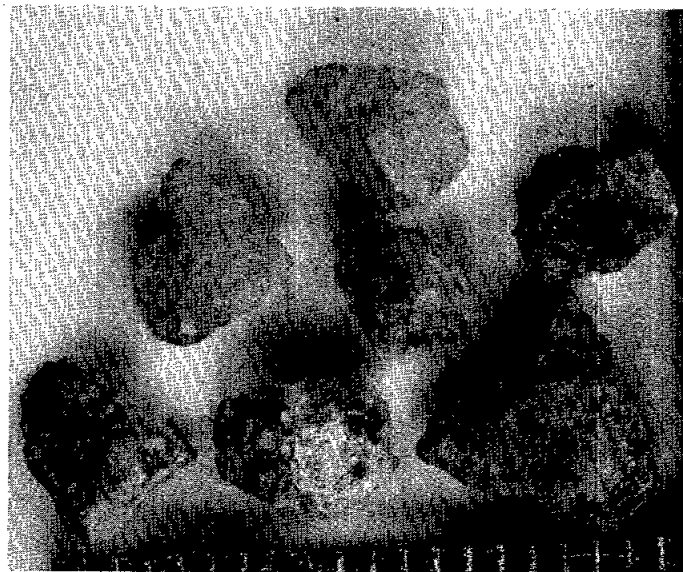
73134  
9.61 grams

"Lithic fragments heavily dust-coated and some glass."

73144,1

Feldspathic Breccia  
7 particles, 0.23 grams

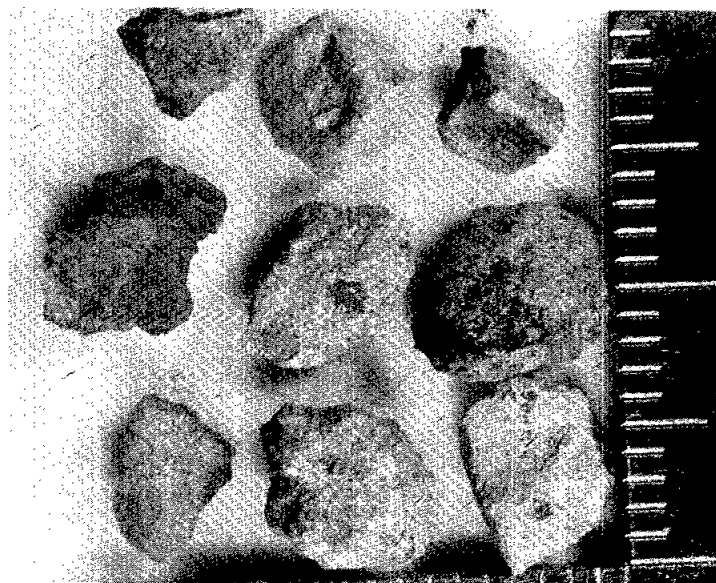
Coherence: Coherent  
Shape: Subangular  
Surface: Often dusty  
Color: Gray  
Photo Number: S-73-22209



73144,2

Feldspathic Breccia  
9 particles, 1.16 grams

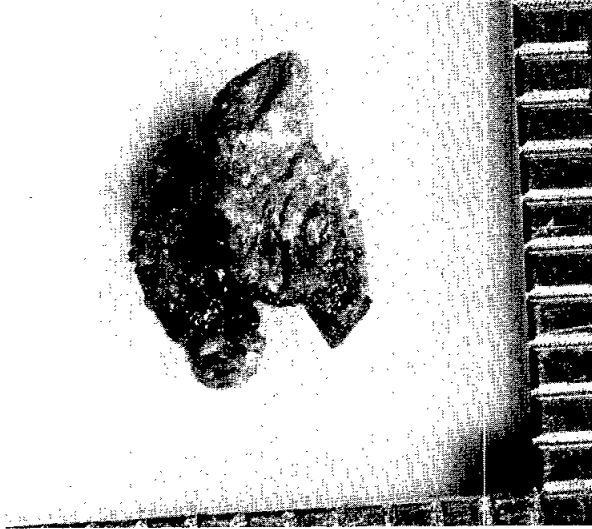
Coherence: Friable to coherent  
Shape: Angular  
Surface: Often dusty  
Color: Pale gray  
Mineralogy: Highly feldspathic matrix. Mineral clasts plagioclase dominant. A few lithic clasts sugary plagioclase-rich.  
Photo Number: S-73-22210



73144,3

Glass Coating on Microbreccia  
1 particle, 0.06 grams

Coherence: Delicate  
Shape: Irregular  
Surface: Glass-smooth vesicular breccia - "dusty"  
Color: Gray black glass  
Mineralogy: Glass  
Remarks: Glass coating on microbreccia  
Photo Number: S-73-22212



73144,4

Breccia  
2 particles, 0.23 grams

Coherence: Tough  
Shape: Subangular  
Surface: Rough or hackly  
Color: Light gray  
Mineralogy: (a) Plagioclase-rich matrix, anorthosite clast, one pink spinel  
(b) Annealed anorthosite fragment  
Photo Number: S-73-22206





73144,5

Glass

1 particle, 0.28 grams

Coherence: Tough  
Shape: Angular  
Surface: Smooth  
Color: Dark gray  
Mineralogy: Vein of vesicular black glass in microcrystalline  
plagioclase-rich breccia including fine-grained clasts of  
gabbroic anorthosite  
Photo Number: S-73-22207



73144,6

Feldspathic Breccia

2 particles, 0.44 grams

Coherence: Friable to tough  
Shape: Rounded to subangular  
Color: Gray  
Remarks: ~70% plagioclase, ~30% gray clasts  
Photo Number: S-73-22211



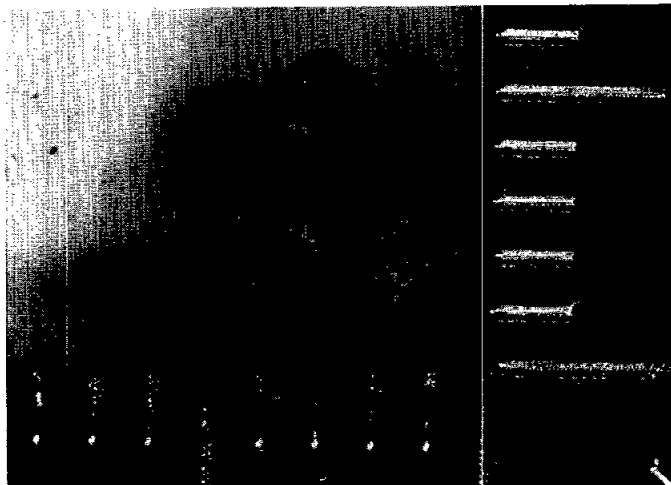
73144,7  
Anorthosites  
5 particles, 1.16 grams

Coherence: Tough  
Shape: Angular  
Surface: Dusty - sugary  
Color: Pale gray  
Mineralogy: Plagioclase 90-70%, pale FeMg 10-30%, fine-grained  
Remarks: Annealed, recrystallized texture  
Photo Number: S-73-22208



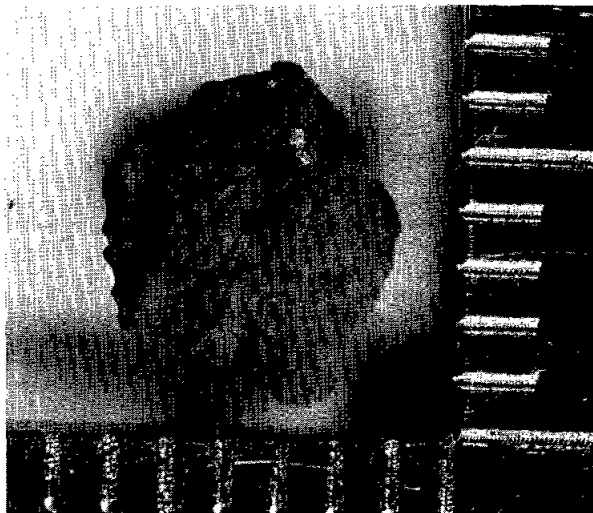
73154,1  
Anorthosite  
1 particle, 0.11 grams

Coherence: Tough  
Shape: Angular  
Surface: Dirt on one side  
Color: Light gray to white  
Mineralogy: 85% plagioclase, 14% gray pyroxene, 1% light greenish mineral  
Remarks: Grain size ~1-2 mm  
Photo Number: S-73-21794



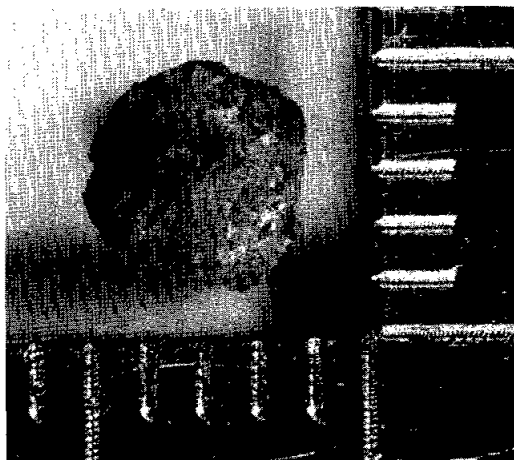
73154,2  
Breccia  
1 particle, 0.09 grams

Coherence: Tough  
Shape: Subrounded  
Surface: Dirt adhering  
Color: Blue gray  
Mineralogy: Aphanitic matrix with 10% white clasts  
Photo Number: S-73-21795



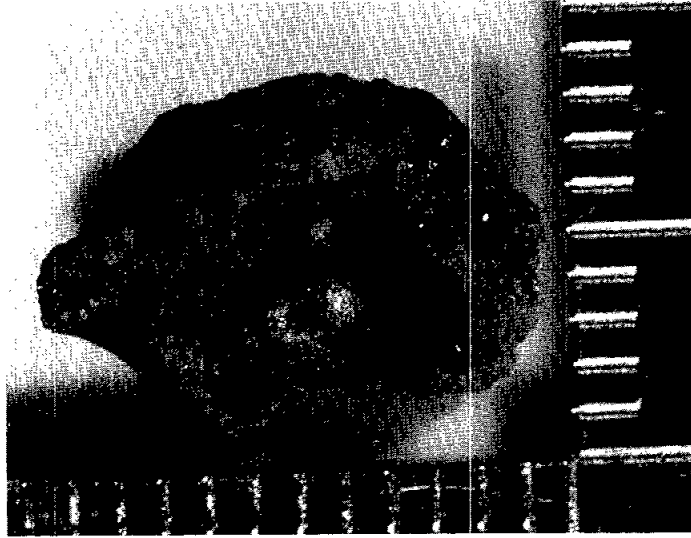
73154,3  
Feldspathic Breccia  
1 particle, 0.11 grams

Coherence: Tough  
Shape: Rounded  
Color: Light tan to white  
Mineralogy: 70% plagioclase, 25% tannish gray mineral, 2% opaques  
Remarks: Chalky plagioclase  
Photo Number: S-73-21796



73214,1  
Glass  
1 particle, 0.47 grams

Coherence: Tough  
Shape: Irregular, vesicular  
Surface: Shiny  
Color: Black  
Mineralogy: All glass  
Remarks: 2-4 mm diameter, vesicle walls define both sides of this particle. 20% vesicles range in size from 0.5 - 4 mm  
Photo Number: S-73-21783



73214,2  
Anorthosite  
2 particles, 0.55 grams

Coherence: Tough  
Shape: Subrounded  
Surface: 10% dirt covered  
Color: White  
Mineralogy: 95% plagioclase, ~5% pink spinel in interstices(?)  
Remarks: Annealed recrystallized texture  
Photo Number: S-73-21784



73214,3

Feldspathic Breccia  
4 particles, 0.53 grams

Coherence: Tough  
Shape: Angular to subrounded  
Color: Blue gray  
Mineralogy: ~80% plagioclase, 20% gray mineral  
Remarks: Annealed plagioclase  
Photo Number: S-73-21785



73214,4

Feldspathic Breccia  
3 particles, 0.73 grams

Coherence: Tough  
Shape: Subrounded  
Surface: 10% dirt  
Color: Tannish white  
Mineralogy: 70% plagioclase, 2% opaque, 25% gray pyroxene (orthopyroxene), 3% light greenish mineral (olivine)  
Remarks: One particle has grain size ~1 mm and ~10% light brown pyroxene, somewhat mottled texture, possible hornfelsic texture  
Photo Number: S-73-21786



73214,5

Breccia

1 particle, 0.15 grams

Coherence: Friable

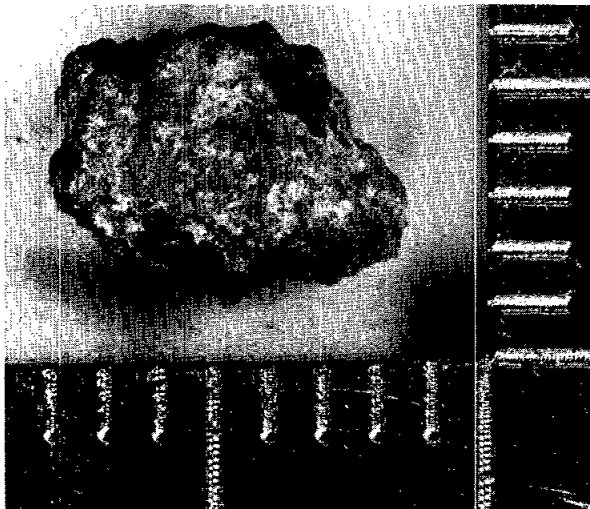
Shape: Irregular

Surface: Dirty

Color: Black and white

Mineralogy: 70% devitrified black glass and 30% chalky white plagioclase

Photo Number: S-73-21787



73224,1

Anorthosite

1 particle, 0.13 grams

Coherence: Tough

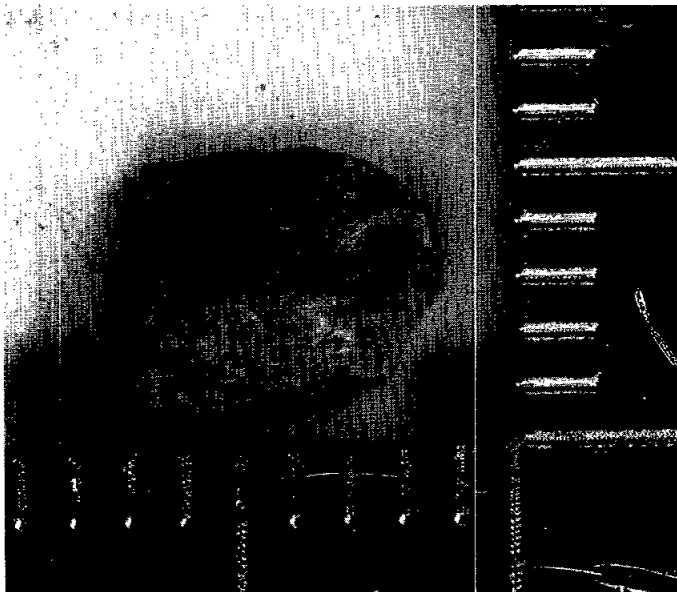
Shape: Subrounded

Color: Dull white

Mineralogy: 100% plagioclase

Remarks: Annealed, fine-grained

Photo Number: S-73-21789



73224,2

Feldspathic Breccia  
3 particles, 1.0 grams

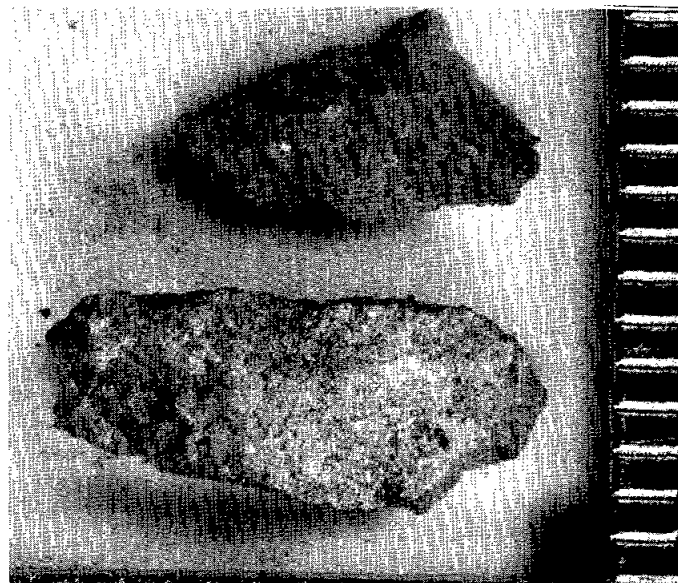
Coherence: Tough  
Shape: Angular  
Surface: 10% coated with white dirt  
Color: Blue gray  
Mineralogy: ~80% plagioclase, 20% gray mineral  
Remarks: One particle has a 0.5 mm bloodied spinel grain.  
Annealed plagioclase.  
Photo Number: S-73-21790



73224,3

Feldspathic Breccia  
2 particles, 0.38 grams

Coherence: Tough  
Shape: Angular elongate  
Color: Tannish white  
Mineralogy: 20% tannish gray pyroxene, 70% plagioclase, 10% light green mineral, 1% opaque  
Remarks: Greenish mineral has microporphyritic texture. Grain size 0.5 mm with green mineral up to 1 mm  
Photo Number: S-73-21791



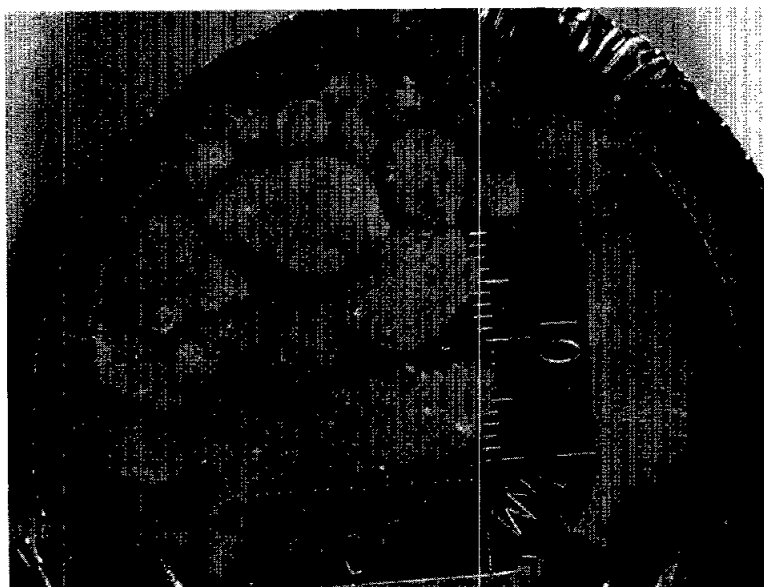
73224,4  
Breccia?  
1 particle, 0.1 grams

Coherence: Friable  
Shape: Rounded  
Color: Light brown  
Mineralogy: 50% light brown glass or pyroxene, 20% white plagioclase  
and 30% gray mineral (or matrix)  
Photo Number: S-73-21792



73244,1  
Soil Breccia  
24 particles, 6.19 grams

Coherence: Soft, very friable  
Shape: Rounded  
Surface: Dusty, loose  
Color: Pale gray, but yellow hue  
Mineralogy: Highly feldspathic  
Photo Number: S-73-22193





73244,2

Breccia

9 particles, 2.08 grams

Coherence: Coherent

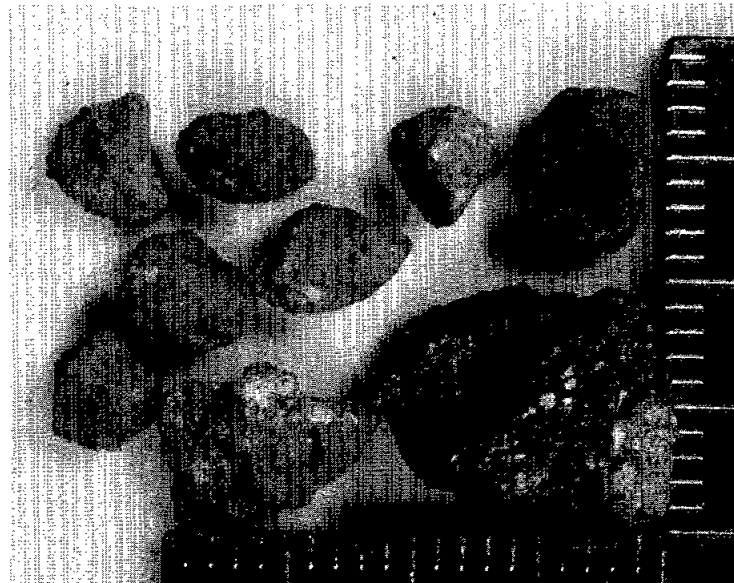
Shape: Angular - subangular

Surface: Some dusty, some smooth

Color: Range in pale gray

Mineralogy: Matrix plagioclase-rich. Lithic clasts crushed anorthositic types. Largest fragment has striations on one surface and some adherent glass. One contains pink spinel. Also differs in being slightly darker in general color. Largest fragment is different from the others.

Photo Number: S-73-22194



73244,3

Soil Microbreccia

1 particle, 0.84 grams

Coherence: Friable

Shape: Rounded

Surface: Sandy loose

Color: Gray - brown hue compared with ,1.

Remarks: Glass spheres visible, embedded in sample

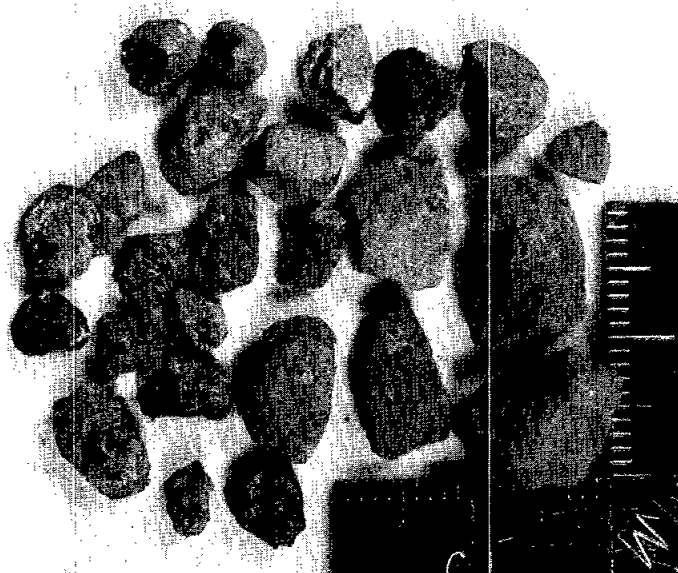
Photo Number: S-73-22195



73244,4

Feldspathic Breccia  
25 particles, 6.71 grams

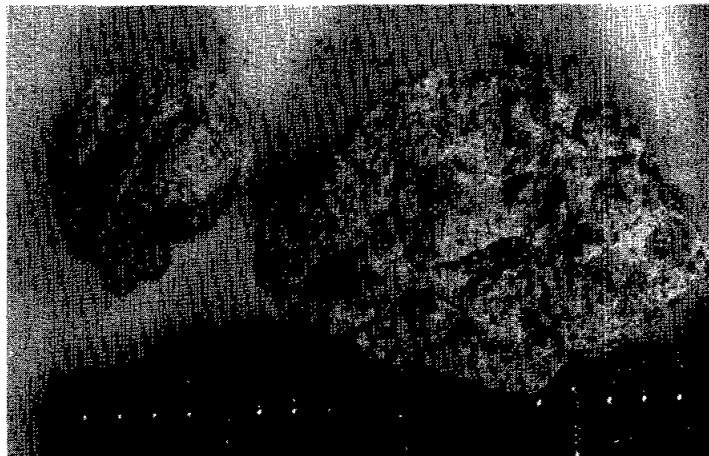
Coherence: Tough  
Shape: Angular - subangular  
Surface: Hackly  
Color: Pale gray - much same as ,1.  
Mineralogy: ~70% sugary plagioclase, 30% gray mineral (orthopyroxene?)  
Remarks: Annealed texture  
Photo Number: S-73-22196



73244,5

Crushed Anorthosite  
2 particles, 0.97 grams

Coherence: Coherent  
Shape: Subangular  
Surface: Knobbly  
Color: White  
Mineralogy: Plagioclase > 90% - fine gray  
Fragments in chalky white matrix  
Photo Number: S-73-22197



73244,6

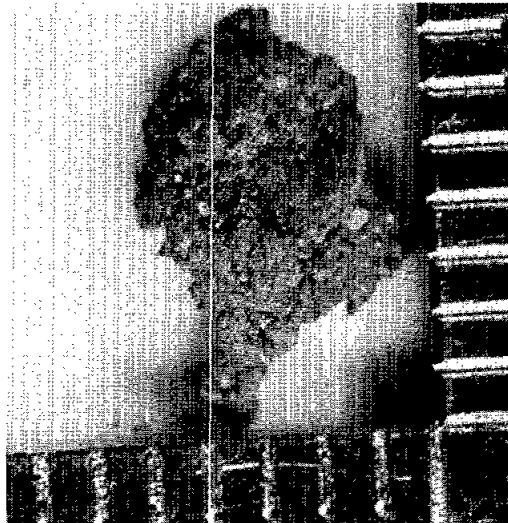
Anorthosite  
3 particles, 0.08 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly to smooth  
Color: White  
Mineralogy: ~90% sugary plagioclase  
Remarks: Recrystallized texture  
Photo Number: S-73-22198



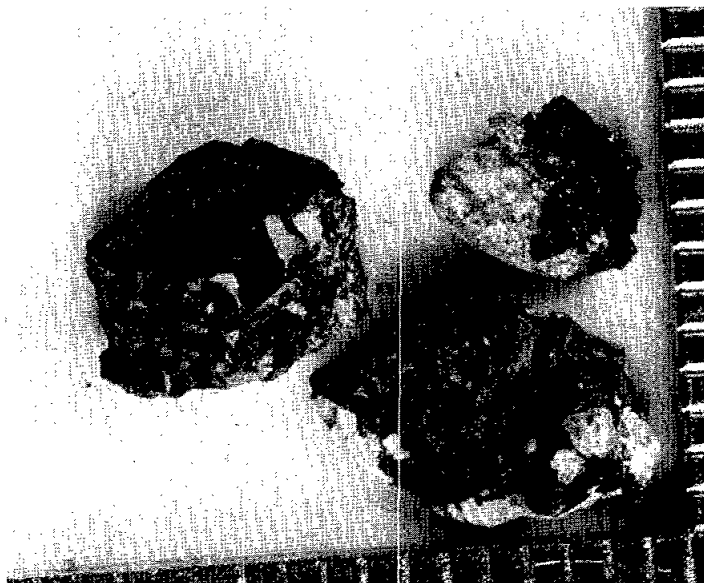
73244,7  
 Pale Agglutinate  
 1 particle, 0.03 grams

Coherence: Delicate  
 Shape: Irregular  
 Surface: Adherent mineral grains on glass  
 Color: Gray  
 Mineralogy: 50% glass - 50% soil  
 Remarks: Glass bonded feldspathic agglutinate  
 Photo Number: S-73-22199



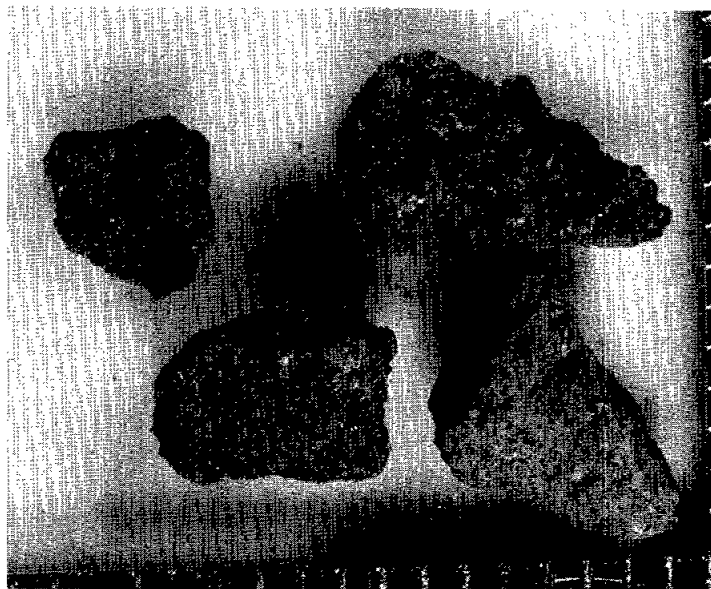
73244,8  
 Glass  
 3 particles, 0.49 grams

Coherence: Tough  
 Shape: Angular  
 Surface: Vitreous  
 Color: Brown gray  
 Mineralogy: One is a glass seam, one partially devitrified, other  
 glass coating and vein on soft microbreccia.  
 Photo Number: S-73-22200



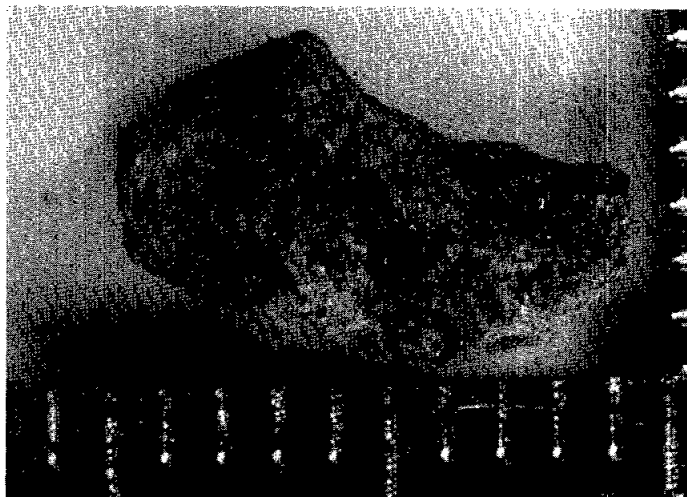
73244,9  
Basalt  
4 particles, 0.64 grams

Coherence: Coherent  
Shape: Angular  
Surface: Hackly  
Color: Gray - brown  
Mineralogy: Plagioclase 30%, pyroxene-cinnamon 60%, opaques 10%  
Grain size 0.2 mm average  
Photo Number: S-73-22201



73244,10  
Olivine Rich Basalt  
1 particle, 0.31 grams

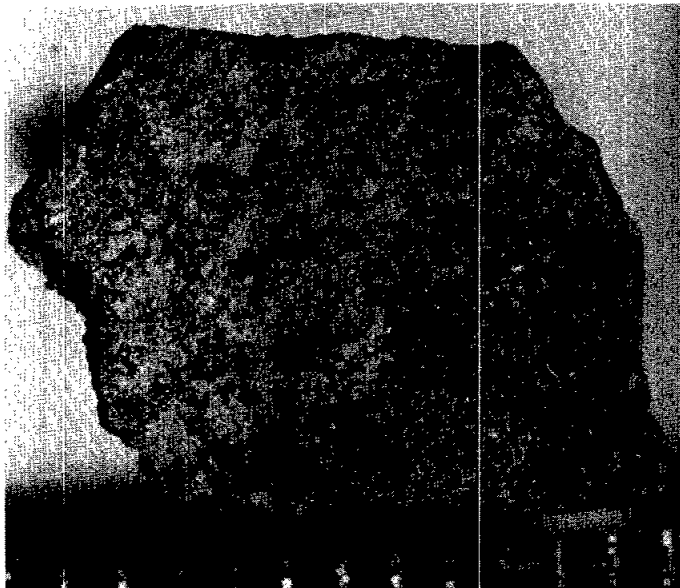
Coherence: Tough  
Shape: Blocky  
Surface: Hackly  
Color: Gray - green  
Mineralogy: Olivine - microphenocrysts 2 mm 30%, plagioclase 40%,  
pyroxene-green brown 25%, opaques 5%.  
Photo Number: S-73-22202



73244,11

Olivine - Ilmenite Basalt  
1 particle, 1.06 grams

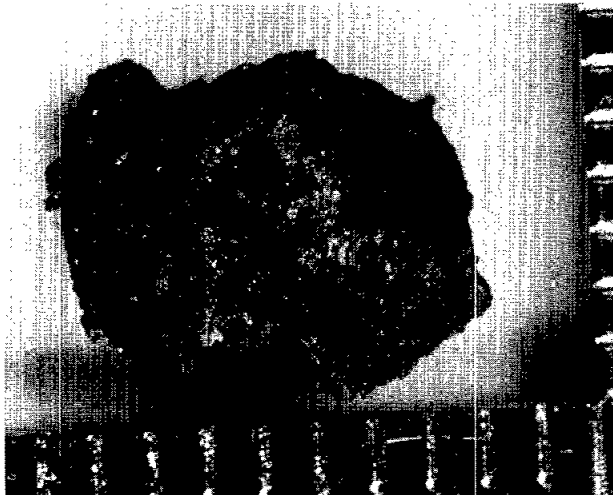
Coherence: Tough  
Shape: Subangular  
Surface: Hackly  
Color: Dark gray  
Mineralogy: Olivine green  $\pm$  10% phenocrysts in dark finer-grained matrix, ilmenite 30%  
Photo Number: S-73-22203



73244,12

Breccia  
1 particle, 0.6 grams

Coherence: Tough  
Shape: Irregular  
Surface: Hackly, metal covered, splashed  
Color: Dark gray, silvery metallic  
Mineralogy: Feldspathic soil breccia coated and veined by Fe metal with subordinate yellow phase(?) troilite.  
Remarks: Unique metal features, splashed and veining structures.  
Photo Number: S-73-22204



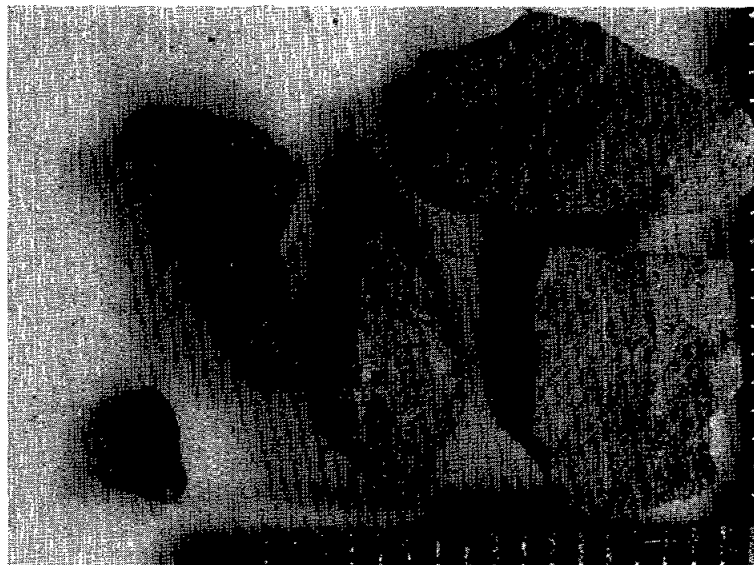
73264,1  
Feldspathic Breccia  
12 particles, 2.06 grams

Coherence: Coherent  
Shape: Subangular  
Surface: Very dusty  
Color: Pale gray  
Mineralogy Plag-rich  
Photo Number: S-73-22214



73264,2  
Fine-grained, recrystallized metaclastic  
5 particles, 2.03 grams

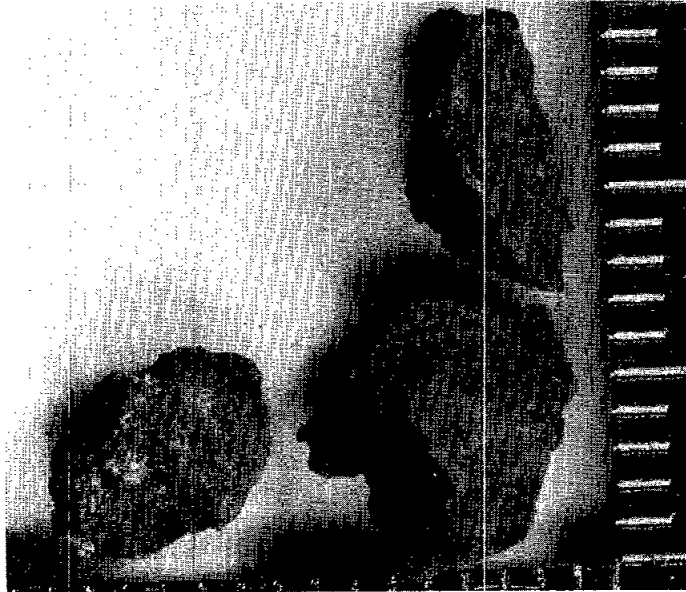
Coherence: Tough  
Shape: Angular  
Surface: 1/2 very dusty  
Color: Two types, one aphanitic - gray, other sugary texture,  
paler gray yellow hue.  
Mineralogy: Gray type plagioclase-pyroxene; pale gray type plagioclase  
or pyroxene, slightly coarser grain size.  
Remarks: Non-vesicular, highly recrystallized.  
Photo Number: S-73-22215



73264,3

Vesicular Recrystallized Metaclastic  
3 particles, 0.52 grams

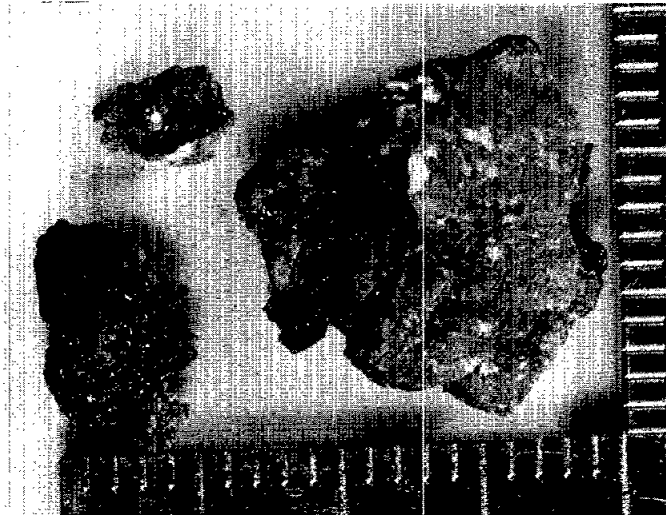
Coherence: Tough  
Shape: Subangular  
Surface: Fine hackly  
Color: Gray  
Mineralogy: ~70% plagioclase, and 30% interstitial colorless pyroxene  
(orthopyroxene?)  
Remarks: 5% vesicles  
Photo Number: S-73-22216



73264,4

Agglutinated Breccia  
3 particles, 0.97 grams

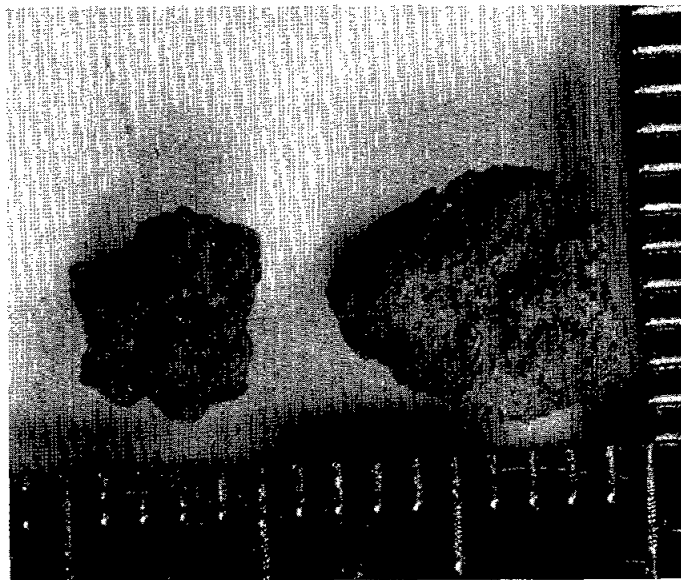
Coherence: Friable  
Shape: Irregular  
Surface: Glass coated  
Color: Glass dark gray, yellowish tint in places  
Mineralogy: Breccia pale gray friable feldspathic soil breccia  
with feldspathic clasts dominant  
Remarks: Fresh surfaces on glass, vesicular and blisterly,  
flows into cracks in microbreccia.  
Photo Number: S-73-22217





73264,5  
 Basalt  
 2 particles, 0.52 grams

Coherence: Tough  
 Shape: Rounded  
 Surface: Dusty  
 Color: Gray  
 Mineralogy: Cinnamon pyroxene, plagioclase and ilmenite visible  
 but dust obscures details  
 Remarks: Small vugs present. Mare type basalt.  
 Photo Number: S-73-22218



73284,1  
 Breccia  
 12 particles, 3.31 grams

Coherence: Coherent  
 Shape: Subangular  
 Surface: Dusty  
 Color: Pale gray  
 Mineralogy: Feldspar rich matrix composed of minute mineral fragments,  
 mineral clasts glassy and chalky feldspar common, pale pyroxene  
 and olivine rare.  
 Remarks: Largest fragment possibly rare recrystallized microbreccia.  
 Photo Number: S-73-22228



73284,2

High Grade Metaclastic  
7 particles, 1.56 grams

Coherence: Tough  
Shape: Angular  
Surface: Dusty - crystalline  
Color: Medium gray  
Mineralogy: ~70% fine-grained plagioclase  
Photo Number: S-73-22229



73284,3

Glass Bearing Breccias  
2 particles, 0.19 grams

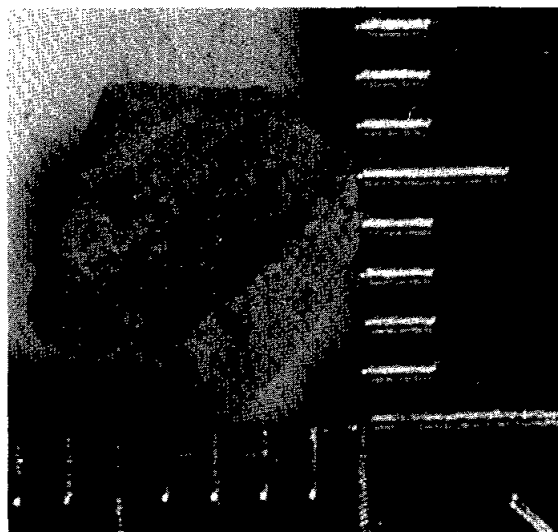
Coherence: Coherent  
Shape: Irregular  
Surface: Smooth to rough  
Color: Pale and medium gray  
Mineralogy: Microbreccia (of ,1) one with gray glass coating, other  
with possible seams of glass in microbreccia  
Photo Number: S-73-22230



73284,4

High Grade Metaclastic  
1 particle, 0.36 grams

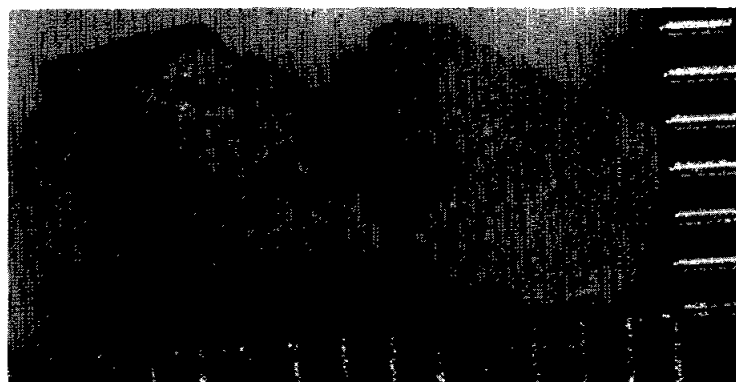
Coherence: Tough  
Shape: Angular  
Surface: Crystalline  
Color: Medium gray  
Mineralogy: ~60% fine-grained plagioclase and ~40% gray pyroxene.  
Several mineral clasts of pale green olivine.  
Photo Number: S-73-22231



73284,5

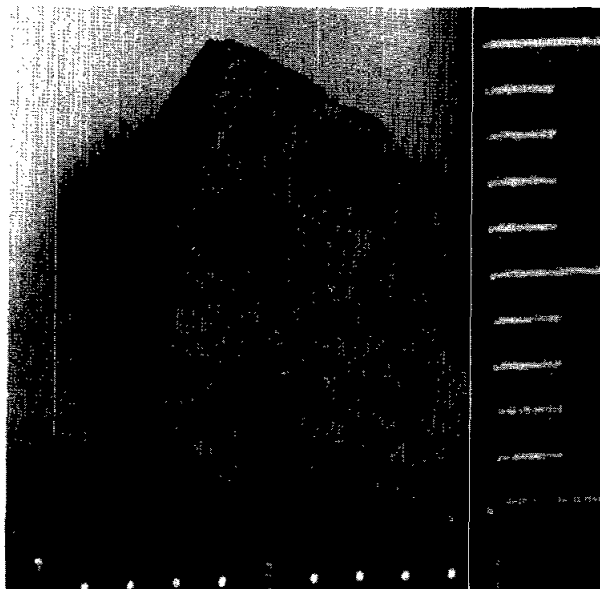
Granulitic Anorthosite  
2 particles, 0.42 grams

Coherence: Tough  
Shape: Subangular  
Surface: Smooth, dusty  
Color: Very pale gray  
Mineralogy: 80% sugary plagioclase. Pyroxene is also present.  
Remarks: One fragment has a glass lined (colorless) zap pit.  
Photo Number: S-73-22232



73284,6  
Basalt  
1 particle, 0.92 grams

Coherence: Tough  
Shape: Blocky  
Surface: Dusty  
Color: Dark gray  
Mineralogy: 50% plagioclase, 45% pyroxene (cinnamon color), 5% opaques  
Photo Number: S-73-22233



PRELIMINARY DESCRIPTION

Not yet dusted, photographed or subdivided

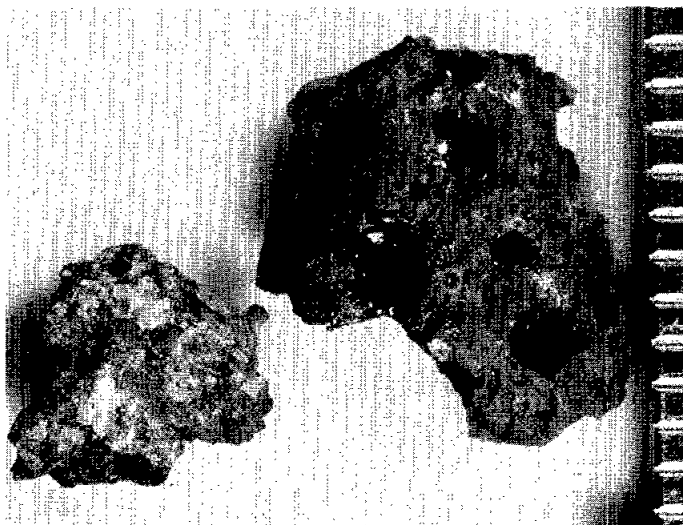
75124  
0.956 grams

"100% basalt fragments in flat, elongate, subangular to subrounded."

76034,7

Glass Crust  
2 particles, 0.27 grams

Coherence: Delicate  
Shape: Irregular  
Surface: One side is vesicular glass (vesicles ~1 mm) with zap pits on it. Other side is glass with attached chalky white plagioclase.  
Color: Black and white  
Mineralogy: 80% glass, 20% plagioclase  
Photo Number: S-73-21916



76124,1

Anorthositic Breccia  
1 particle, 0.18 grams

Coherence: Friable  
Shape: Subrounded  
Surface: Dirty and with glass splashes  
Color: White  
Mineralogy: 80% chalky white plagioclase, 20% light gray patches of plagioclase.  
Remarks: Glass lined zap pits, glass splashes and many spall zones.  
This is a good particle for zap pit studies. Nearly saturated(?).  
Photo Number: S-73-21960



76124,2  
Soil Breccia  
18 particles, 1.1 grams

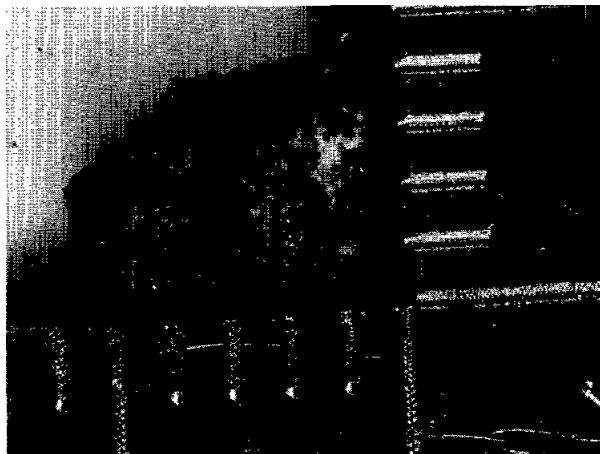
Coherence: Friable  
Shape: Irregular and rounded  
Surface: Glass coated  
Color: Gray  
Mineralogy: 80% soil, 10% black glass (agglutinated), 10% white  
                  clasts  
Photo Number: S-73-21961



76134,1

Basalt  
1 particle, 0.11 grams

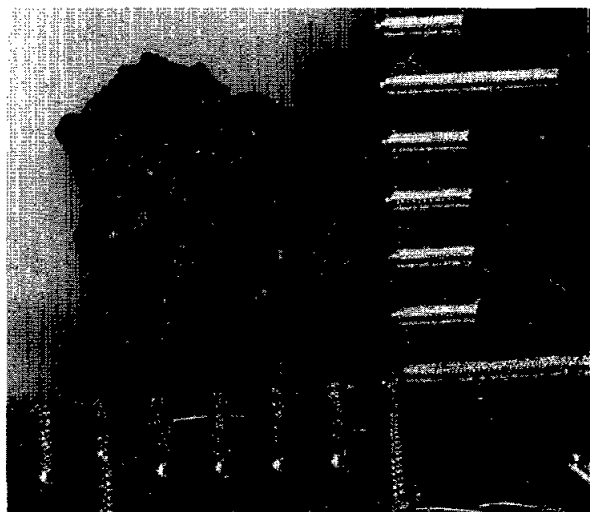
Coherence: Tough  
Shape: Subrounded  
Surface: 30% adhering dirt  
Color: Light gray  
Mineralogy: 50% plagioclase, 40% light brown pyroxene, 10% opaques  
Remarks: This may be a clast out of a soil matrix breccia. Grain  
size 2 mm.  
Photo Number: S-73-21969



76134,2

Basalt  
1 particle, 0.11 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: Aphanitic  
Remarks: Grain size 0.2 mm - appears to be rich in mafic minerals  
Photo Number: S-73-21971



76134,3

Breccia

3 particles, 1.37 grams

Coherence: Tough

Shape: Angular

Surface: One particle has thick coat of vesicular black glass on one side.

Color: Gray

Mineralogy: 80% gray matrix, 20% white clasts

Remarks: One blood red (~0.5 mm) spinel grain. Similar to Van Serg breccia.

Photo Number: S-73-21972



76134,4

Vesicular Norite

8 particles, 1.42 grams

Coherence: Tough

Shape: Blocky to subrounded

Surface: Dirt in vesicles

Color: White

Mineralogy: 2% opaques, 60% plagioclase (light gray to chalky white), 38% light greenish yellow mineral (orthopyroxene?)

Remarks: Four of these eight have up to 40% vesicular cavities by volume. These are the most unusual particles, all very similar to each other. They must be reworked material because they have many vesicles as well as mottled appearance.

Similar to 76135.

Photo Number: S-73-21970





76224,1

Soil Breccias  
6 particles, 0.54 grams

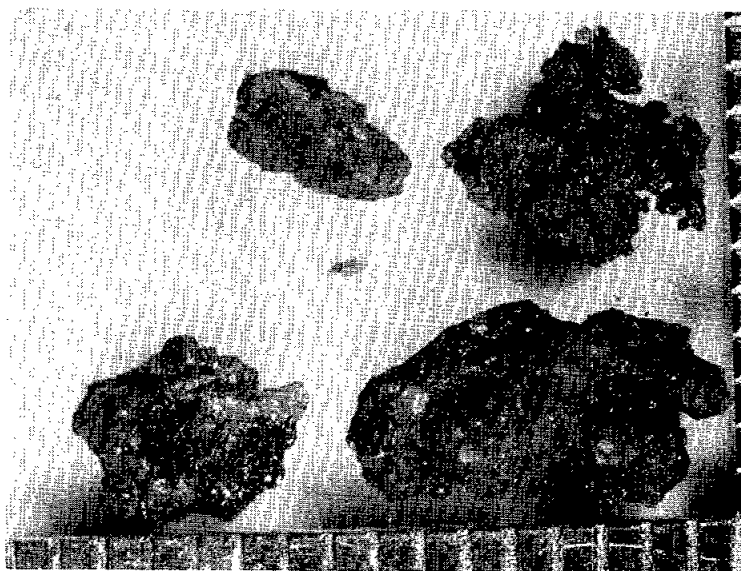
Coherence: Friable  
Shape: Rounded  
Color: Gray  
Mineralogy: Aphanitic matrix with white clasts  
Remarks: Small black spheres visible in matrix  
Photo Number: S-73-22625



76224,2

Agglutinate  
4 particles, 0.25 grams

Coherence: Delicate  
Shape: Irregular  
Color: Dark gray  
Mineralogy: 80% glass, 20% soil  
Photo Number: S-73-22626



76224,3

Anorthosite  
2 particles, 0.31 grams

Coherence: Tough  
Shape: Angular  
Color: White  
Mineralogy: 90% plagioclase, 10% gray mineral  
Remarks: Annealed texture  
Photo Number: S-73-22627



76224,4

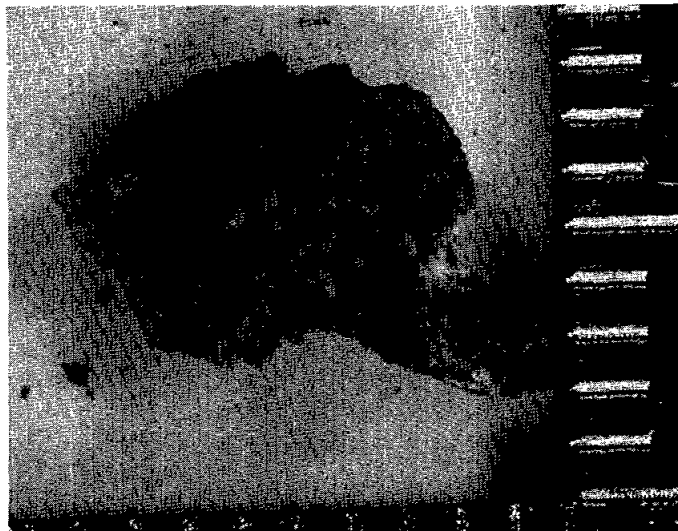
Feldspathic Basalt  
5 particles, 0.53 grams

Coherence: Tough  
Shape: Angular  
Surface: Two particles have original surface with vuggy texture  
Color: Tannish white  
Mineralogy: 60% plagioclase, 30% gray mineral, 10% yellowish green mineral  
Remarks: Grain size less than 0.5 mm. These may be metamorphic rocks.  
Photo Number: S-73-22628



76224,5  
Breccia  
1 particle, 0.15 grams

Coherence: Fractured  
Shape: Irregular, angular  
Surface: Dirty  
Color: Tannish white  
Mineralogy: 80% plagioclase, 20% gray matrix  
Photo Number: S-73-22629



76224,6  
Feldspathic Breccia  
5 particles, 1.45 grams

Coherence: Tough  
Shape: Angular to subrounded  
Color: Blue gray  
Mineralogy: 80% plagioclase, 20% gray mineral, almost aphanitic  
Remarks: Annealed texture, may be devitrified plagioclase glass.  
Photo Number: S-73-22630



76244,1

Feldspathic Basalt  
4 particles, 1.38 grams

Coherence: Tough  
 Shape: Angular  
 Surface: Two particles have original surface on one side  
 Color: Tannish gray  
 Mineralogy: 60% plagioclase, 35% gray mineral (orthopyroxene?), 5% yellowish green mineral, 2% opaques.  
 Remarks: 10% vesicles (2 mm), 5% vugs (1 mm). Possible hornfelsic texture  
 Photo Number: S-73-22644



76244,2

Basalt  
1 particle, 0.1 grams

Coherence: Tough  
 Shape: Subrounded  
 Surface: Dirty  
 Color: Gray  
 Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaques  
 Remarks: Mare basalt  
 Photo Number: S-73-22645



76264,1  
Soil Breccia  
13 particles, 3.01 grams

Coherence: Friable  
Shape: Rounded and irregular  
Surface: Three particles have glass coatings, such as agglutinates  
Color: Light gray  
Mineralogy: 90% aphanitic soil, 10% black glass  
Photo Number: S-73-22632



76264,2  
Basalt  
4 particles, 0.64 grams

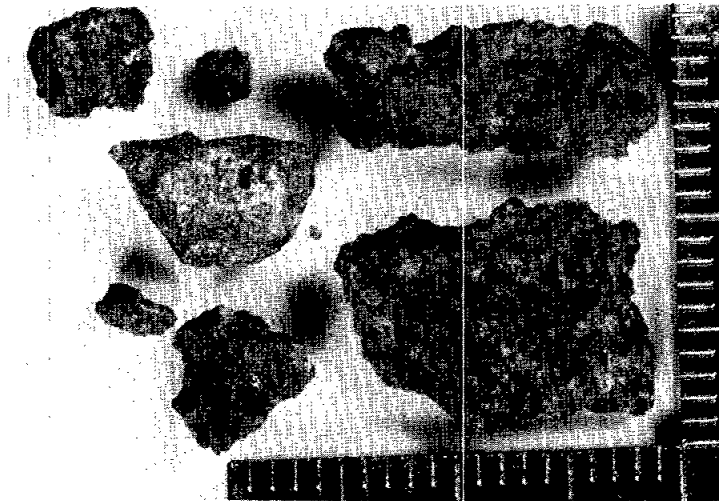
Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: 40% plagioclase, 40% light brown pyroxene, 15% opaques  
and 5% olivine  
Remarks: Grain size 0.5 - 2 mm. The finer grain size particles appear  
to have more mafics.  
Photo Number: S-73-22633



76264,3

Feldspathic Basalt  
7 particles, 1.79 grams

Coherence: Tough  
Shape: Angular  
Color: Tannish gray  
Mineralogy: 60% plagioclase, 30% gray mineral (orthopyroxene?), 8% yellowish green and 2% opaques.  
Remarks: 15% vugs and irregular vesicles with smooth walls. Possible hornfelsic texture.  
Photo Number: S-73-22634



76264,4

Feldspathic Breccia  
4 particles, 0.53 grams

Coherence: Friable  
Shape: Subrounded  
Color: Light gray  
Mineralogy: 80% light gray matrix with both 10% white and 10% black clasts (0.5 mm)  
Remarks: These were probably all one piece initially.  
Photo Number: S-73-22635



76264,5  
Anorthositic Breccia  
12 particles, 2.14 grams

Coherence: Tough  
Shape: Angular to rounded  
Color: Blue gray to light gray  
Mineralogy: 70-100% plagioclase, 30% gray mineral (orthopyroxene?)  
Remarks: Annealed texture  
Photo Number: S-73-22636



PRELIMINARY DESCRIPTION  
Not yet dusted, photographed or subdivided

76284  
10.69 grams

"3% black glass spheres, 6% light gray crystalline fragments,  
3% pale green breccia, 85% dark gray breccias."

76324,1

Anorthosite

2 particles, 0.26 grams

Coherence: Tough  
Shape: Angular  
Color: White and gray  
Mineralogy: 70% large white crystals of plagioclase attached to  
30% gray annealed plagioclase mass on one side.  
100% plagioclase, grain size approximately 4 mm,  
possibly single crystal. One small zap pit  
Photo Number: S-73-21929

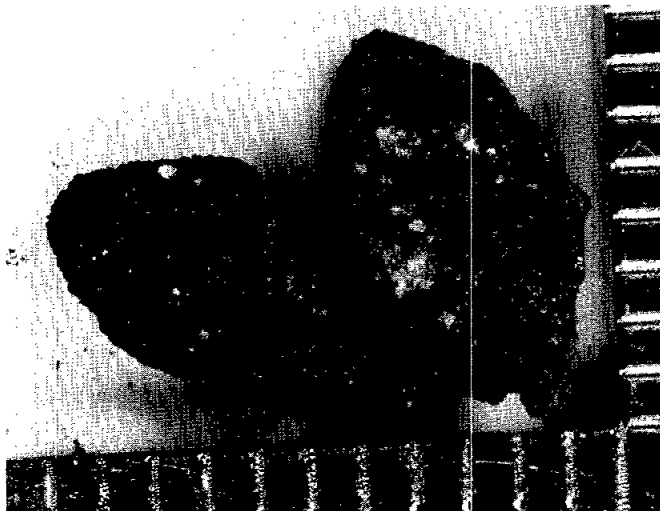


76324,2

Soil Breccia

2 particles, 0.19 grams

Coherence: Soft and friable  
Shape: Rounded  
Surface: 30% glass venier  
Color: Dark gray  
Mineralogy: 70% aphanitic gray soil, 20% white plagioclase rich clasts  
Photo Number: S-73-21923





76324,3

Basalt

2 particles, 0.17 grams

Coherence: Tough

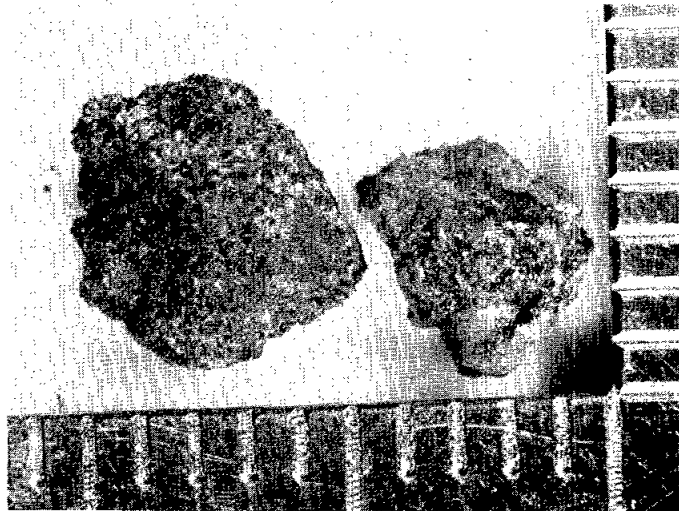
Shape: Rounded

Color: Gray

Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaques.

Remarks: Grain size 0.5 mm (mare basalt)

Photo Number: S-73-21919



76324,4

Feldspathic Basalt

11 particles, 2.06 grams

Coherence: Tough

Shape: Angular

Color: White to light gray

Mineralogy: 70% plagioclase, 25% gray mineral (orthopyroxene?),  
5% light yellow green mineral.Remarks: Grain size (~0.5 mm). Some of these may have hornfelsic  
texture. 5% vesicles.

Photo Number: S-73-21926



74114,1  
Soil Breccia  
~20 particles, 4.81 grams

Coherence: Very friable  
Shape: Rounded  
Surface: Dusty  
Color: Gray  
Mineralogy: Feldspar rich (?)  
Photo Number: S-73-22238



74114,2  
Breccias  
10 particles, 2.17 grams

Coherence: Friable, just coherent  
Shape: Rounded, subrounded  
Surface: Dusty  
Color: Gray, some with brown hue  
Remarks: These include all more coherent fragments in original sample. All very dusty, but possibly include 1 anorthositic clast, 3 high grade fine-grained metaclastics, 3 slightly indurated microbreccias, and 3 soil clods with surface dimples which may be glass seams.  
Photo Number: S-73-22239



74124,1

Breccia - Glass Coated  
1 particle, 0.13 grams

Coherence: Coherent  
Shape: Irregular  
Surface: Coating glass, dark vesicular  
Color: Gray black glass  
Mineralogy: Gray microbreccia, feldspar clasts dominant  
Photo Number: S-73-22235



74124,2

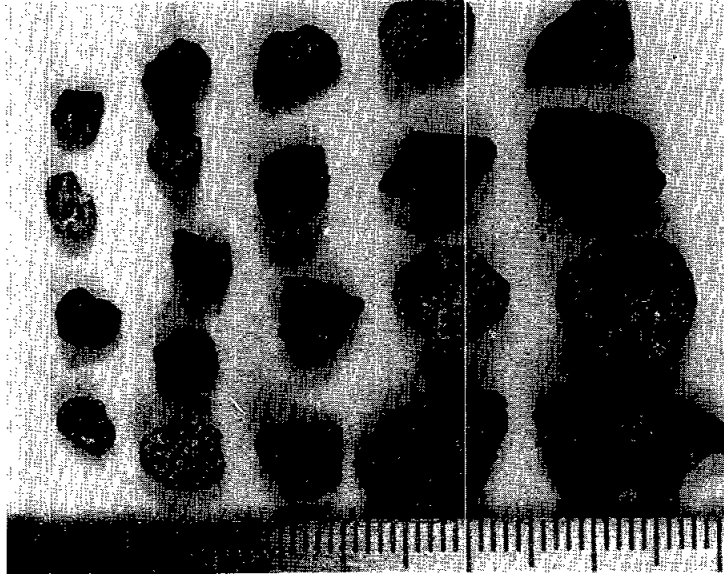
Noritic Anorthosite  
2 particles, 0.26 grams

Coherence: Tough  
Shape: Angular, rounded  
Surface: Dusty  
Color: Very pale gray, one has dark gray coating  
Mineralogy: Plagioclase 70-50%, pyroxene 50-30%  
Remarks: One fragment is coated with fine-grained metaclastic  
or devitrified glass with many small plagioclase crystals.  
Photo Number: S-73-22236



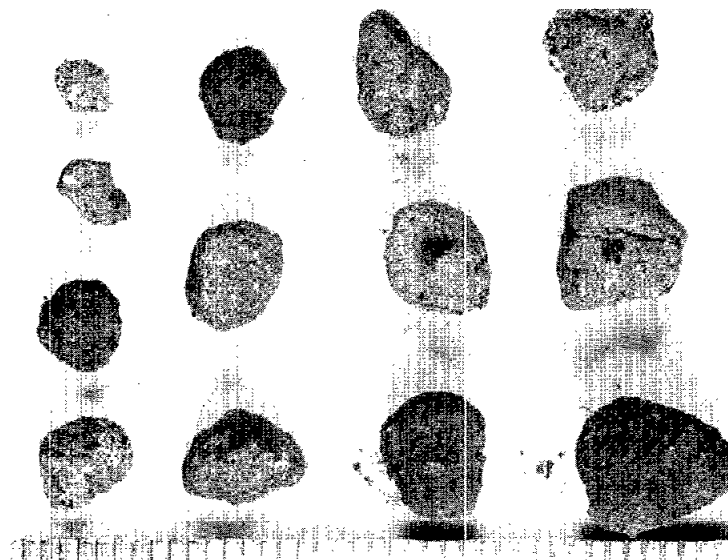
74244,1  
Basalt  
21 particles, 7.360 grams

Coherence: 5 friable, 16 tough  
Shape: Angular to subangular  
Surface: Dirt adhering to surface of all grains  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% pyroxene, 5-20% ilmenite  
Remarks: Few (75%) vugs. Grain size variable (0.2 - 2mm), these  
basalts also vary in ilmenite content.  
Photo Number: S-73-19391



74244,2  
Soil Breccia  
13 particles, 2.061 grams

Coherence: Friable  
Shape: Rounded  
Color: Light gray  
Mineralogy: Clasts of plagioclase, pyroxene, and glass - no  
orange glass visible.  
Remarks: One particle is half basalt clast  
Photo Number: S-73-19392



74244,3

Basalt

19 particles, 6.735 grams

Coherence: Tough  
Shape: Subrounded  
Surface: Welded dust coatings  
Color: Gray  
Mineralogy: Aphanitic  
Remarks: Some of these may be glass matrix breccias.  
Photo Number: S-73-19393

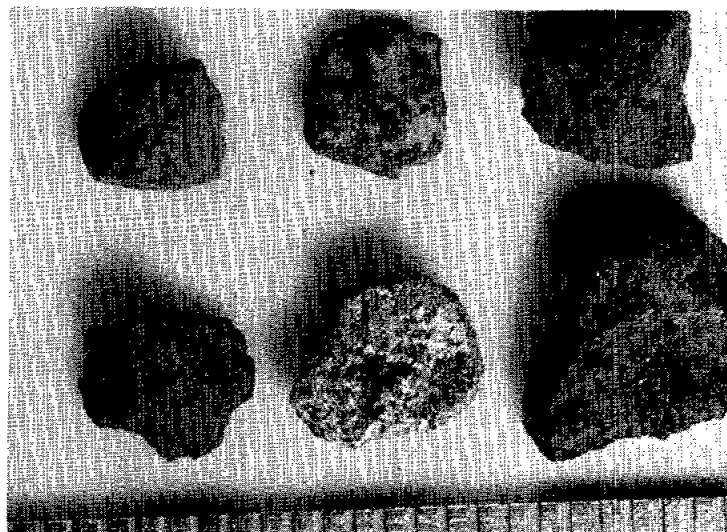


74244,4

Glass Matrix Breccias

6 particles, 1.083 grams

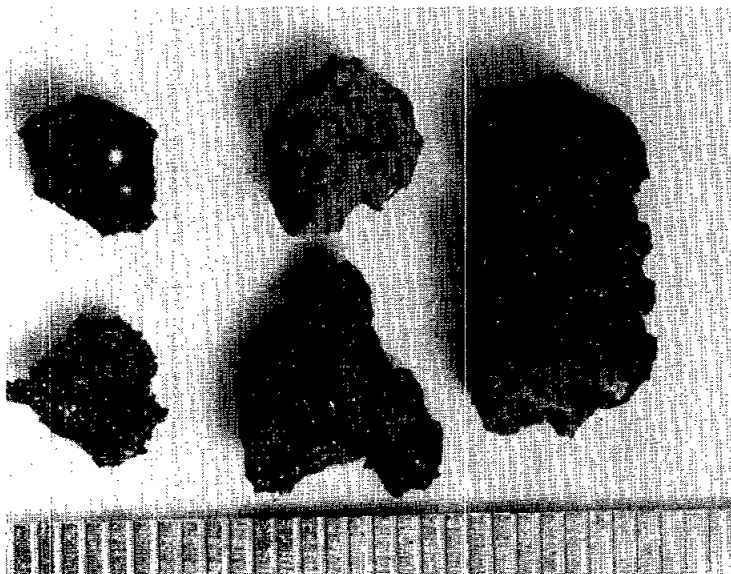
Coherence: Tough  
Shape: Subangular  
Surface: Welded dust coat  
Color: Gray  
Remarks: One fragment has half of a basalt fragment  
Photo Number: S-73-19394



74244,5

Glass, Vesicular  
5 particles, 1.289 grams

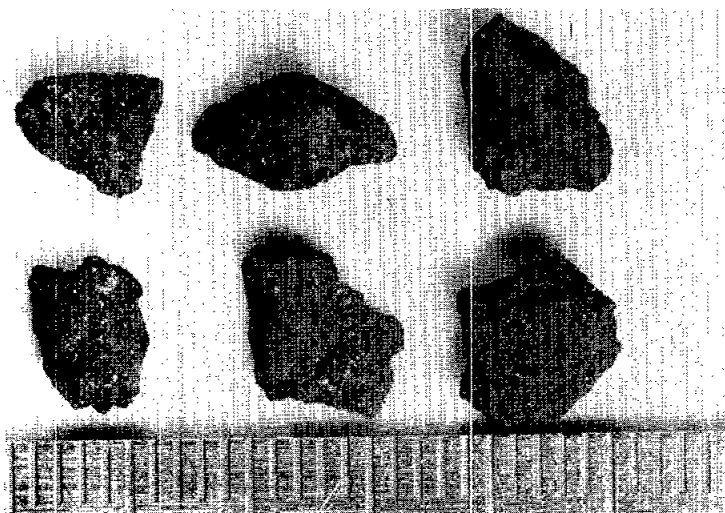
Coherence: Tough  
Shape: Angular  
Surface: Freshly broken  
Color: Black  
Remarks: Vesicles (50%) ranging in size from 0.1 mm - 3 mm.  
One particle has feldspar-rich glass.  
Photo Number: S-73-19395



74244,6

Basalt  
6 particles, 1.180 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: Aphanitic except for 10% olivine phenocrysts (2 mm)  
Photo Number: S-73-19396

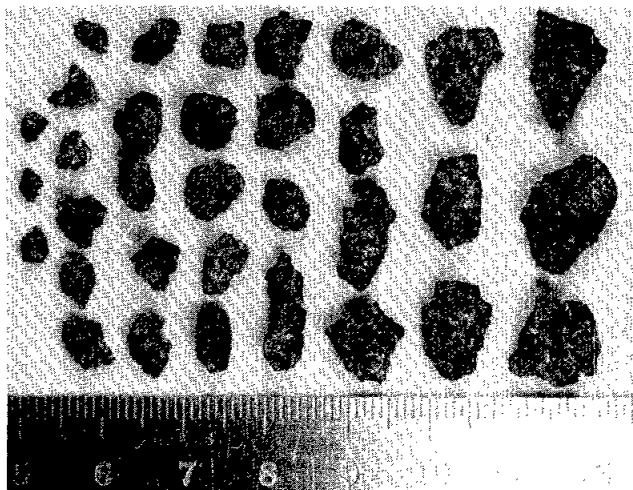


75064,1

Basalt

33 particles, 10.765 grams

Coherence: Coherent  
 Shape: Angular to subrounded  
 Surface: Coarsely granular; small irregular cavities are common but do not have euhedral crystals inside them. Exterior surfaces smoother than freshly fractured ones, and darkened by thin coat of dust. No glass crystals on zap pits observed.  
 Color: Pale reddish brown.  
 Mineralogy: Plagioclase (white) ~35%; pyroxene (cinnamon) 45-50%; opaque (lustrous black) 15-20%.  
 Remarks: Plagioclase occurs in laths up to 3 mm long; pyroxene and opaques (probably ilmenite) fill interstices and also tend to occur together in clumps, forming a glomeroporphyritic texture. Grain size 1-2 mm.  
 Photo Number: S-73-19398

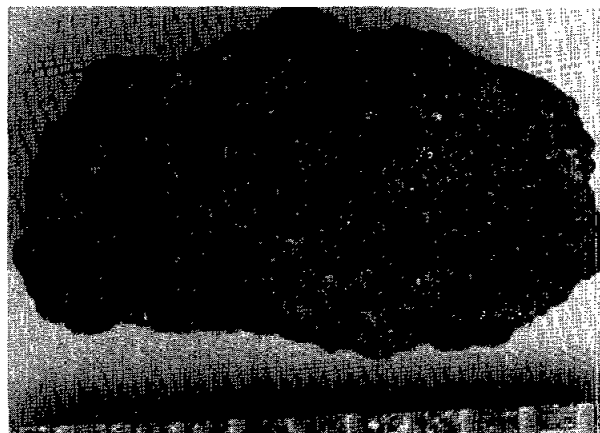


75064,2

Basalt

1 particle, 0.323 grams

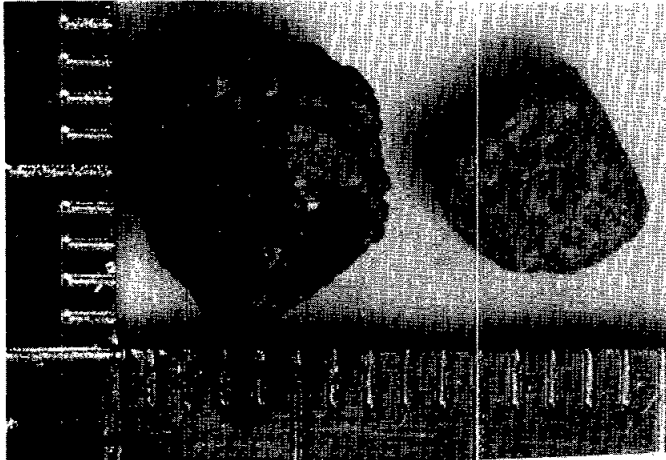
Coherence: Friable to coherent; penetrative fractures could easily cause spalling of small chips.  
 Shape: Subangular, slabby  
 Surface: A few zap pits.  
 Color: Dark gray  
 Mineralogy: Very fine-grained rock rich in reddish-brown pyroxene and ilmenite. Plagioclase present but inconspicuous; mode impossible to judge but appears ilmenite-rich. Sparse olivine grains are coarser than average grain-size of groundmass. Surface reflections suggest presence of needles and micro-porphyrific texture, but this is uncertain.  
 Photo Number: S-73-19399



75084,1

Annealed Plagioclase-Rich Breccias  
2 particles, 0.503 grams

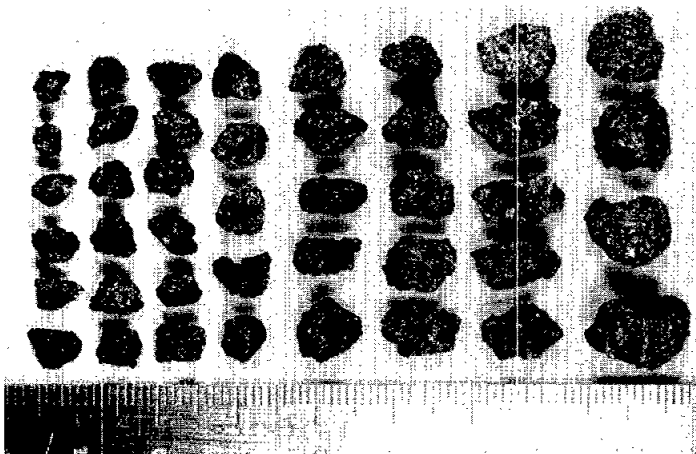
Coherence: Tough  
Shape: Rounded  
Color: White  
Mineralogy: 95% plagioclase, 5% gray mineral (orthopyroxene?)  
Remarks: One side of one particle has 5% broken glass.  
Photo Number: S-73-19453



75084,2

Basalt  
42 particles, 13.141 grams

Coherence: Tough  
Shape: Angular  
Surface: Fresh  
Color: Gray  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaques.  
Remarks: Very few vugs. All these are very similar to one another. Average grain size 1-2 mm.  
Photo Number: S-73-19452

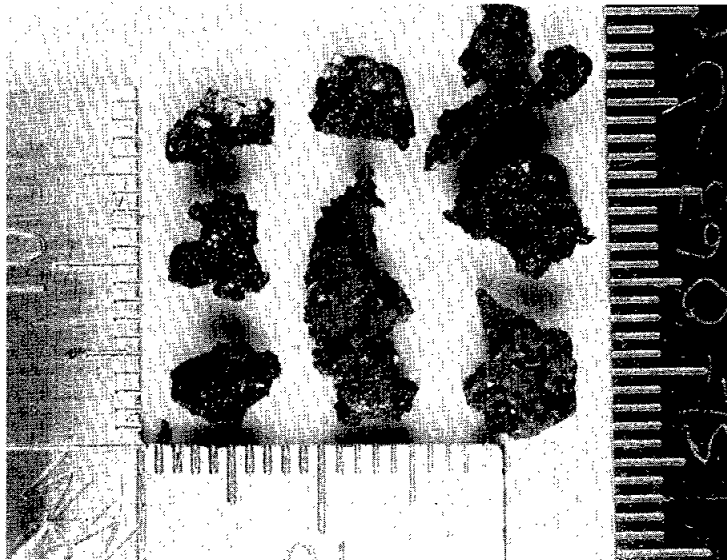




75084,3

Agglutinates  
8 particles, 0.960 grams

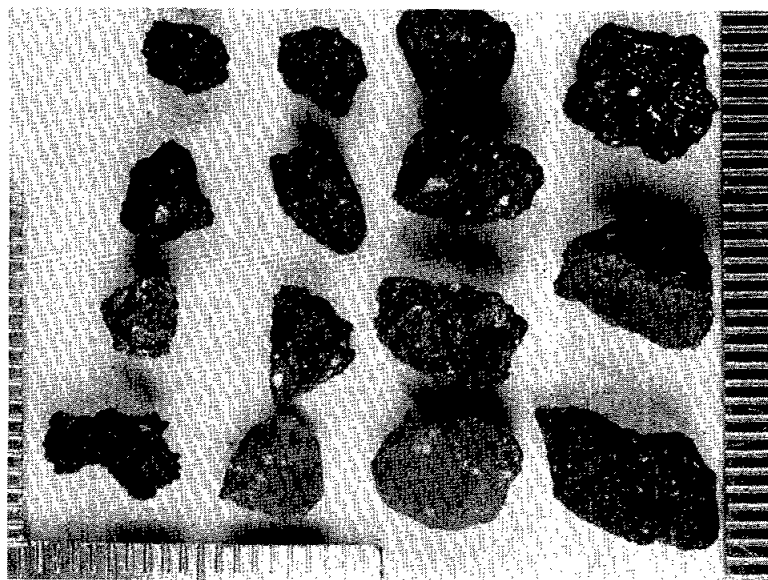
Coherence: Delicate  
Shape: Irregular  
Color: Shiny black glass, dull black breccia  
Mineralogy: 50% glass, 50% soil breccia  
Photo Number: S-73-19451



75084,4

Breccia  
15 particles, 2.552 grams

Coherence: Friable to tough  
Shape: Subangular, some irregular  
Color: Gray  
Mineralogy: Clasts of white in dark gray matrix  
Remarks: A few particles have black vesicular glass attached to one side. Nine out of 15 of these have black matrix similar to Van Serg breccia. Six out of 15 are soil matrix breccias.  
Photo Number: S-73-19450



75084,5

Basalt

12 particles, 4.243 grams

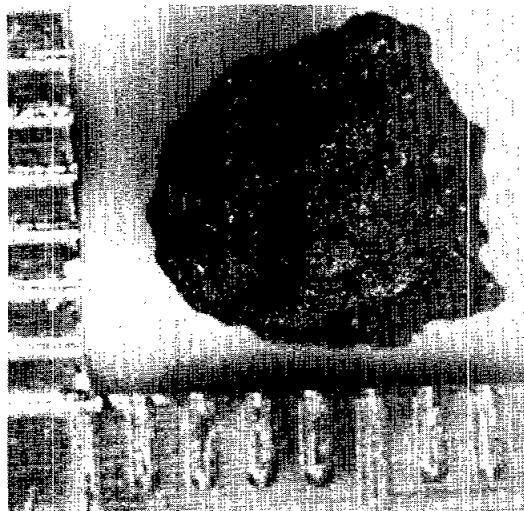
Coherence: Tough  
Shape: Angular to subrounded  
Color: Gray  
Mineralogy: Aphanitic - some are approximately 45% plagioclase,  
45% pyroxene, 10% orthopyroxene.  
Remarks: Two particles coated by welded dust and glass.  
Photo Number: S-73-19449



75084,6

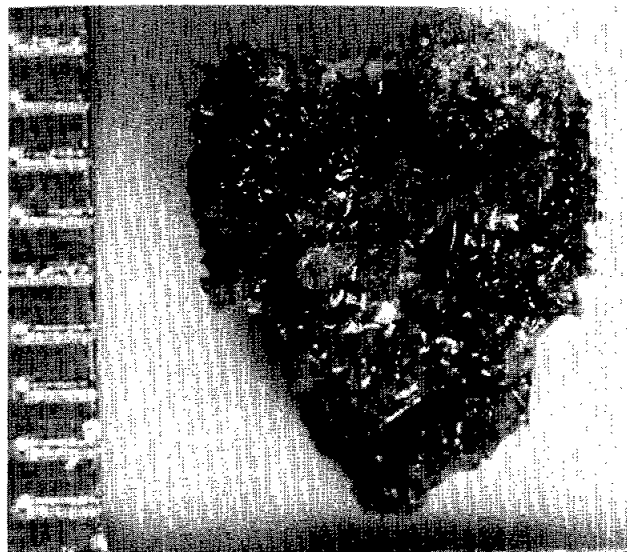
Basalt

Coherence: Tough  
Shape: Angular  
Surface: Fresh  
Color: Black, sometimes shiny  
Mineralogy: Aphanitic, possibly ilmenite rich  
Remarks: Not similar to other basalts of this soil.  
Photo Number: S-73-19448



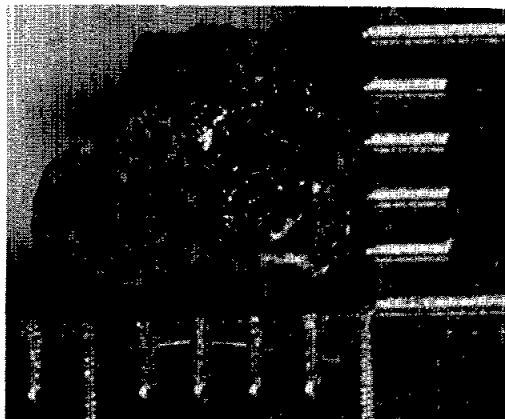
75084,7  
Basalt  
1 particle, 0.315 grams

Coherence: Fragile  
Shape: Angular  
Surface: Glass coated  
Color: White and green  
Mineralogy: Chalky plagioclase coated with multicolored glass.  
Remarks: One side is coated with green, brown, and clear glass  
which appears to be melted minerals of this fragment.  
Photo Number: S-73-19447



75114,1  
Breccia  
1 particle, 0.11 grams

Coherence: Friable  
Shape: Irregular, marbled  
Surface: Half glass coated  
Color: Black and white  
Mineralogy: 50% gray matrix breccia with white clasts, 50% black  
glass.  
Remarks: 1 mm vesicles in gray matrix  
Photo Number: S-73-21963



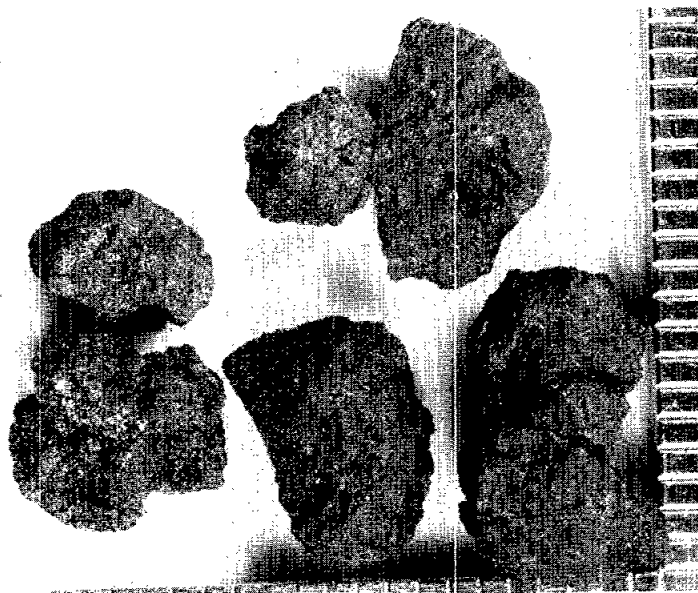
75114,2  
Basalt  
5 particles, 1.75 grams

Coherence: Tough  
Shape: Angular  
Surface: Freshly broken  
Color: Light gray  
Mineralogy: 45% white plagioclase, 45% light brown pyroxene,  
10% opaque  
Remarks: 5% vesicles. Grain size 0.5-1 mm.  
Photo Number: S-73-21964



75114,3  
Basalt  
6 particles, 1.78 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: 30% plagioclase, 50% pyroxene, 20% opaque  
Remarks: 5% vugs. Grain size 0.2 - 0.5 mm. The finer grain  
size appears more mafic.  
Photo Number: S-73-21965

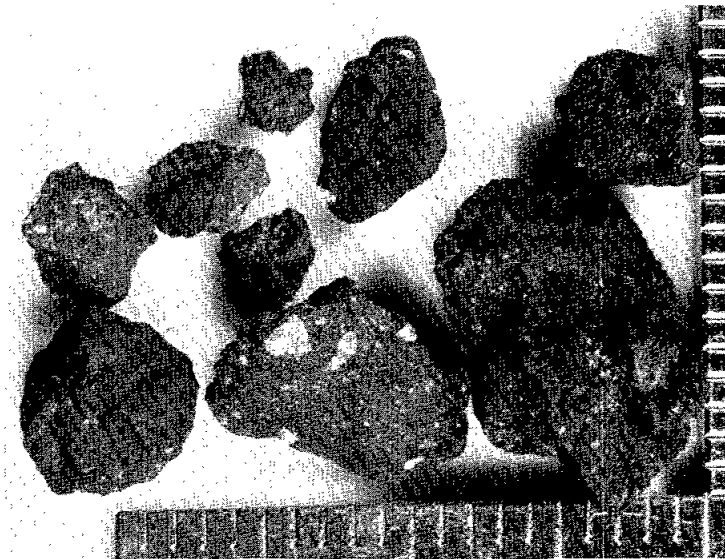


75114,4

Breccia

9 particles, 1.43 grams

Coherence: Tough  
 Shape: Angular to subrounded  
 Surface: 5% thin glass veins  
 Color: Gray  
 Mineralogy: 70% aphanitic gray matrix, 30% white clasts of  
 plagioclase-rich rock types.  
 Photo Number: S-73-21966



75114,5

Basalt

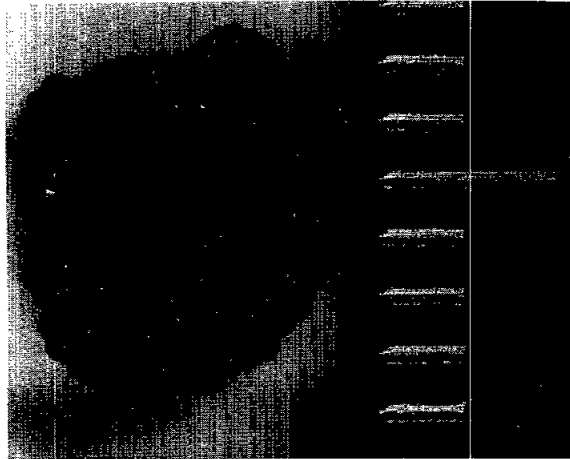
7 particles, 1.69 grams

Coherence: Tough  
 Shape: Angular  
 Surface: 20% dirt coated, 20% smooth  
 Color: Shiny and dull black  
 Mineralogy: Aphanitic  
 Remarks: Vague texture indicating long needles of some opaque mineral.  
 Devitrified black glass. These may be pieces of the dark mantle,  
 but they are gradational to the basaltic rocks of group 3.  
 Photo Number: S-73-21967



76034,1  
Basalt  
1 particle, 0.1 grams

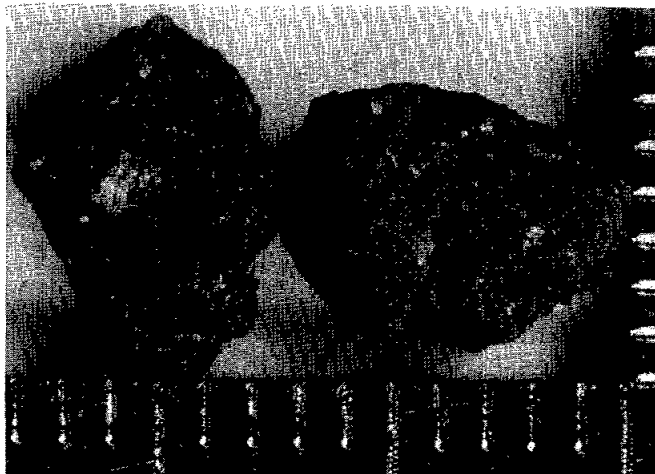
Coherence: Tough  
Shape: Subrounded  
Color: Light gray  
Mineralogy: 20% opaque, 40% plagioclase, 40% light brown pyroxene  
Remarks: 5% vugs. Grain size 0.5 mm.  
Photo Number: S-73-21917



76034,2

Soil Breccia  
2 particles, 0.33 grams

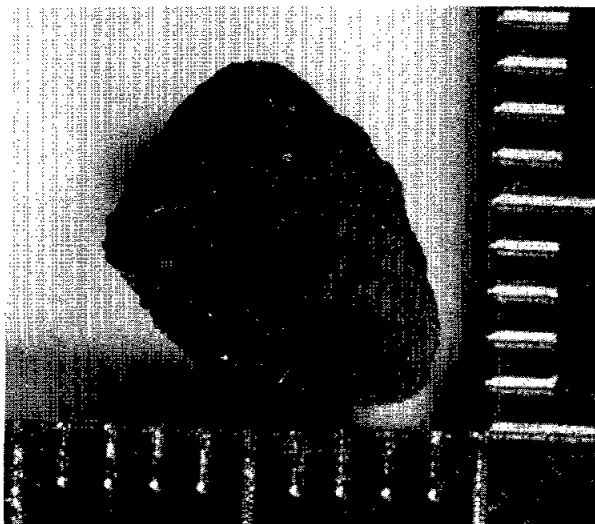
Coherence: Friable  
Shape: Rounded  
Color: Light gray  
Mineralogy: 90% aphanitic matrix, 10% white clasts  
Photo Number: S-73-21914



76034,3

Basalt  
1 particle, 0.43 grams

Coherence: Tough  
Shape: Rounded  
Surface: Dirty  
Color: Dark gray  
Mineralogy: Aphanitic  
Photo Number: S-73-21930

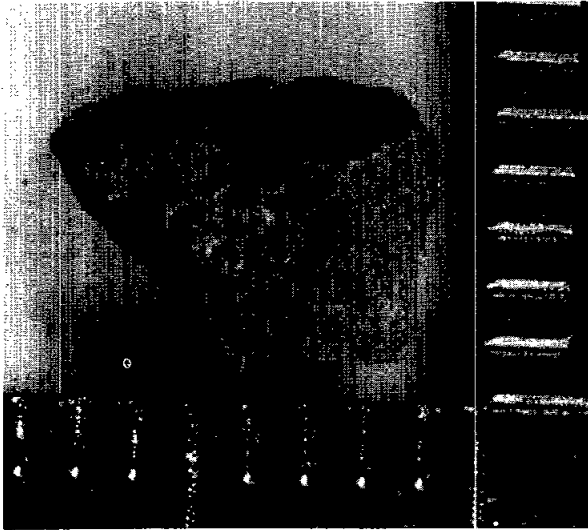


76034,4

Norite?

1 particle, 0.15 grams

Coherence: Tough  
 Shape: Subrounded  
 Color: White  
 Mineralogy: 5% opaque, 70% white plagioclase, 35% gray pyroxene  
 (orthopyroxene?)  
 Remarks: Annealed texture, such as hornfelsic. Grain size less  
 than 0.5 mm.  
 Photo Number: S-73-21924

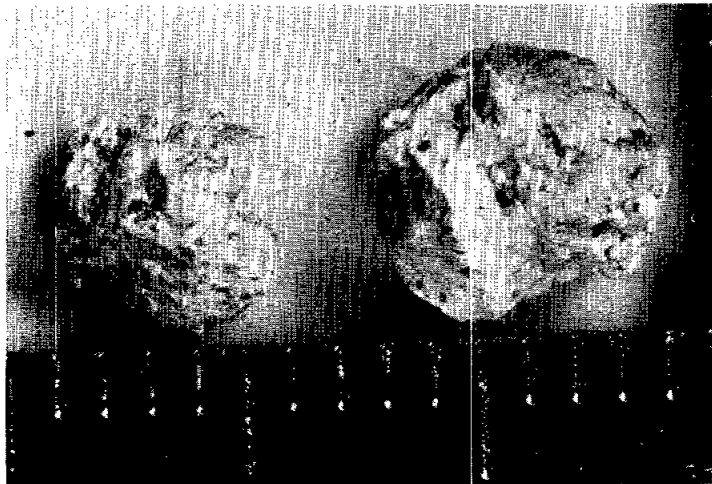


76034,5

Anorthosite

2 particles, 0.23 grams

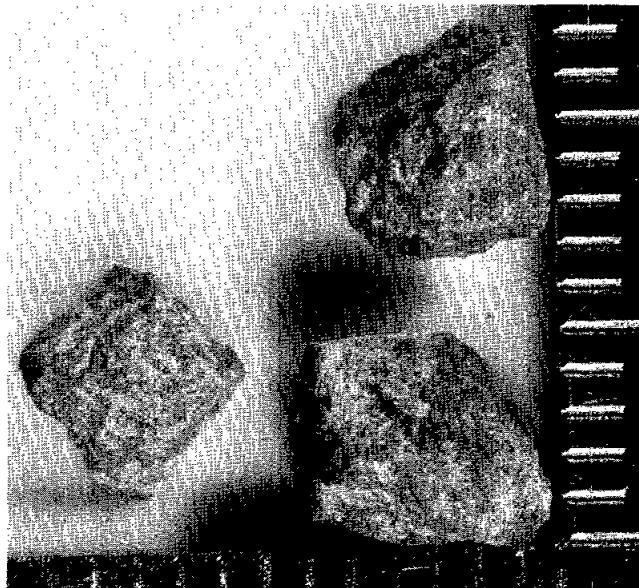
Coherence: Tough  
 Shape: Angular  
 Color: White  
 Mineralogy: 100% chalky white plagioclase  
 Remarks: Single crystals, but badly shocked  
 Photo Number: S-73-21920





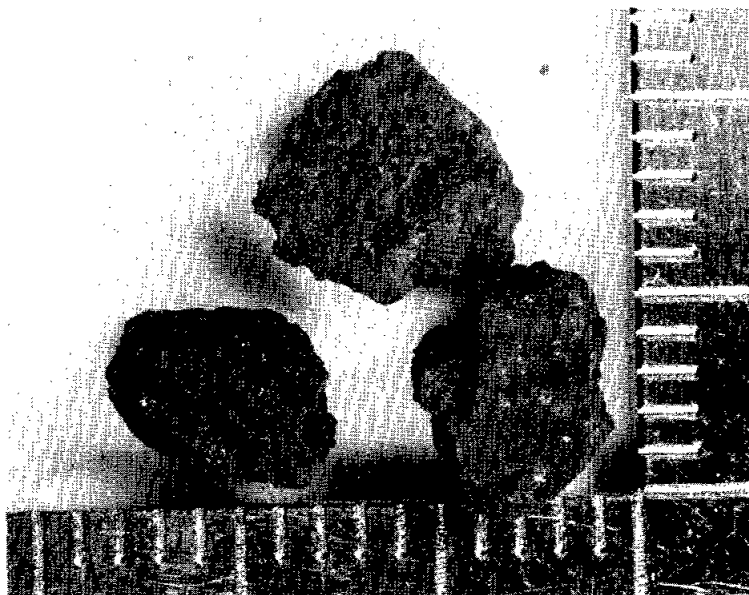
76034,6  
Anorthosite  
3 particles, 0.43 grams

Coherence: Tough  
Shape: Subrounded  
Surface: Coated with whitish dust  
Color: Light gray  
Mineralogy: 100% plagioclase, possibly some pyroxene mineral  
Remarks: Annealed texture  
Photo Number: S-73-21927



76324,5  
Basalt  
3 particles, 0.44 grams

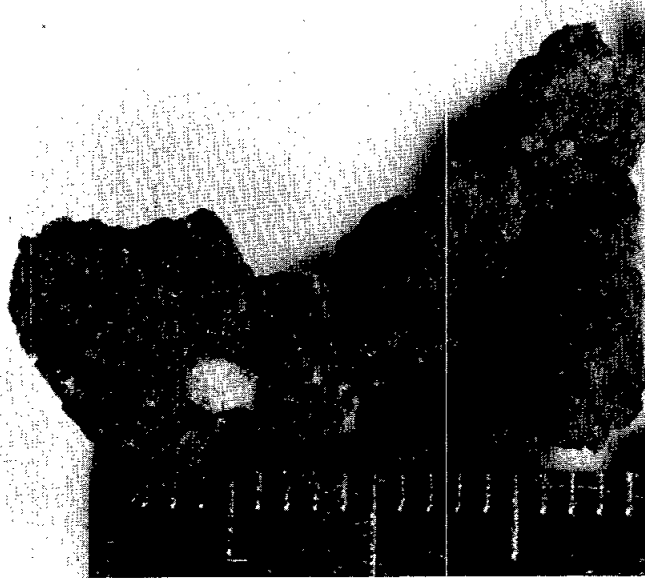
Coherence: Tough  
Shape: Subrounded  
Surface: Zap pits  
Color: Dark gray  
Mineralogy: Aphanitic, mafic rich  
Remarks: These could be devitrified glass  
Photo Number: S-73-21918



76324,6

Plagioclase Rich Breccia  
2 particles, 1.81 grams

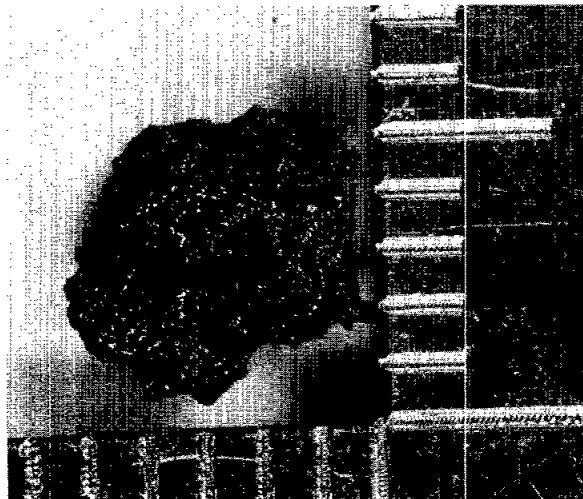
Coherence: Tough  
Shape: Angular  
Surface: 20% dirt coated  
Color: Light tan  
Mineralogy: 70% plagioclase, 25% gray mineral, 5% light brown  
Remarks: Clasts of plagioclase  
Photo Number: S-73-21922



76324,7

Glass  
1 particle, 0.08 grams

Coherence: Delicate  
Shape: Rounded  
Surface: Glass coated  
Color: Black  
Mineralogy: 90% glass, 10% plagioclase  
Photo Number: S-73-21912



76324,8

Anorthositic Breccia  
9 particles, 1.29 grams

Coherence: Tough  
Shape: Angular to subrounded  
Color: Light gray  
Mineralogy: 70% plagioclase, 30% gray mineral or glass  
Remarks: Annealed texture  
Photo Number: S-73-21921



76324,9

Feldspathic Breccia  
22 particles, 3.13 grams

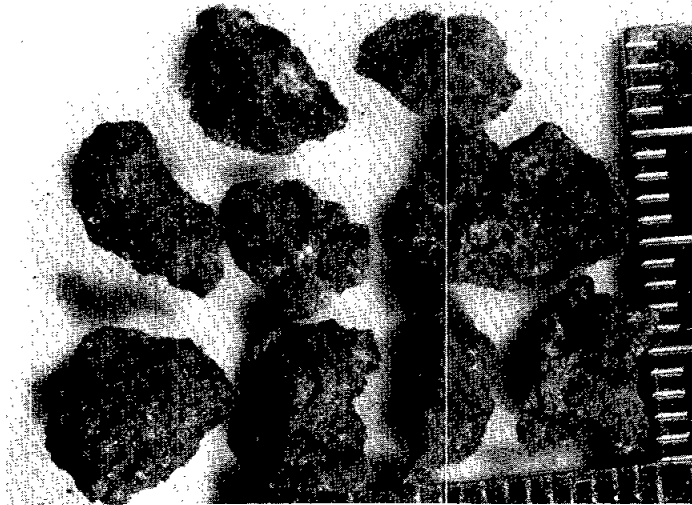
Coherence: Tough  
Shape: Subrounded to angular  
Color: Blue gray to gray  
Mineralogy: 70% plagioclase, 30% blue gray mineral or glass  
Remarks: Annealed texture  
Photo Number: S-73-21915



76324,10

Feldspathic Breccia  
9 particles, 1.93 grams

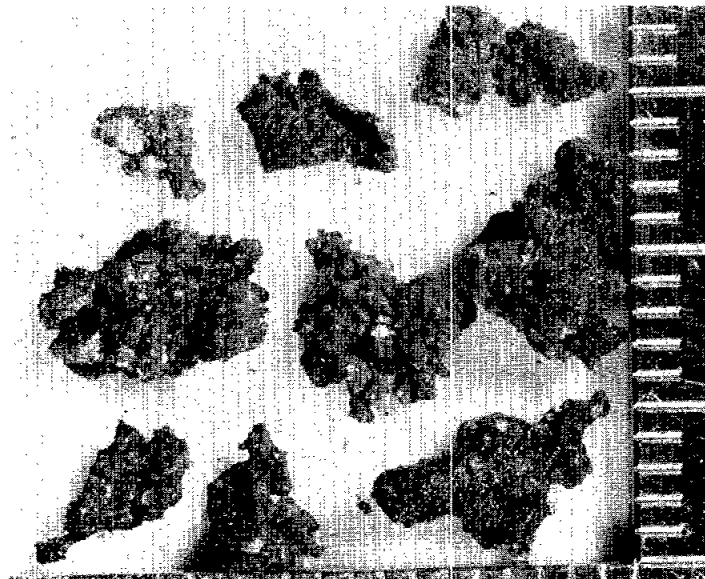
Coherence: Somewhat friable  
Shape: Angular to subrounded  
Color: Light tan  
Mineralogy: 70% plagioclase, 25% light gray mineral (orthopyroxene?),  
5% brown mineral  
Remarks: Not annealed - grain boundaries still visible  
Photo Number: S-73-21925



76504,1

Agglutinate  
9 particles, 0.36 grams

Coherence: Delicate  
Shape: Irregular  
Color: Black  
Mineralogy: 80% glass, 20% soil particles  
Photo Number: S-73-22615



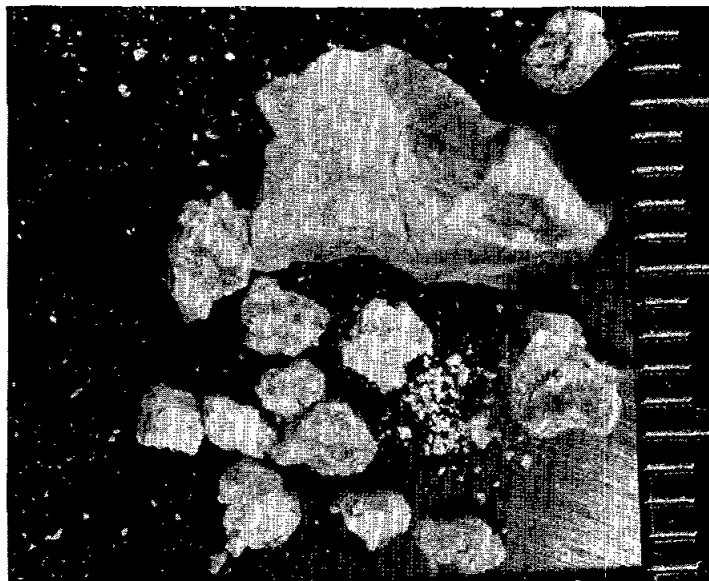
76504,2  
Soil Breccias  
18 particles, 2.02 grams

Coherence: Friable  
Shape: Rounded and irregular  
Surface: Half of these particles are glass coated with glass  
similar to that of agglutinates.  
Color: Dark gray  
Mineralogy: 80% soil, 20% glass  
Remarks: Similar to 76506  
Photo Number: S-73-22616



76504,3  
Anorthosite  
8 particles, 0.37 grams

Coherence: Soft  
Shape: Angular  
Color: Chalky white  
Mineralogy: 100% plagioclase  
Remarks: Highly shocked  
Photo Number: S-73-22617



76504,4

Basalt

7 particles, 1.17 grams

Coherence: Tough

Shape: Subrounded

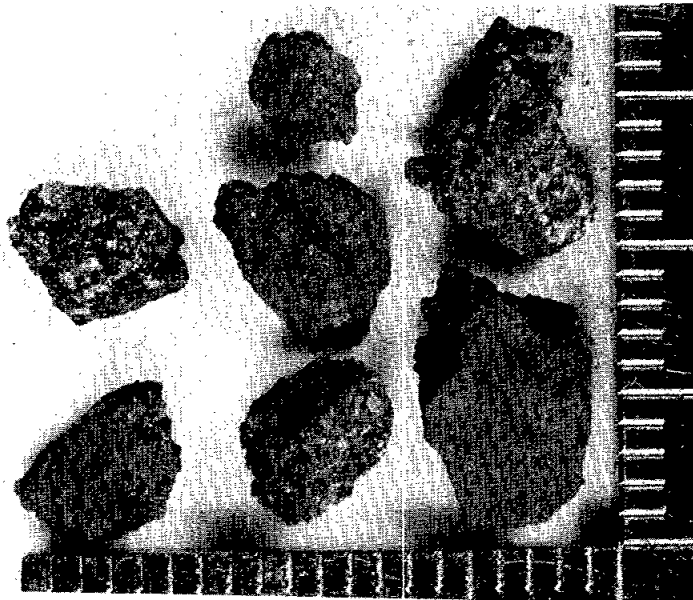
Surface: Dirty

Color: Gray

Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque

Remarks: Mottled, possibly clasts from breccias

Photo Number: S-73-22618



76504,5

Soil Breccia with Anorthositic Clast

1 particle, 0.42 grams

Coherence: Friable

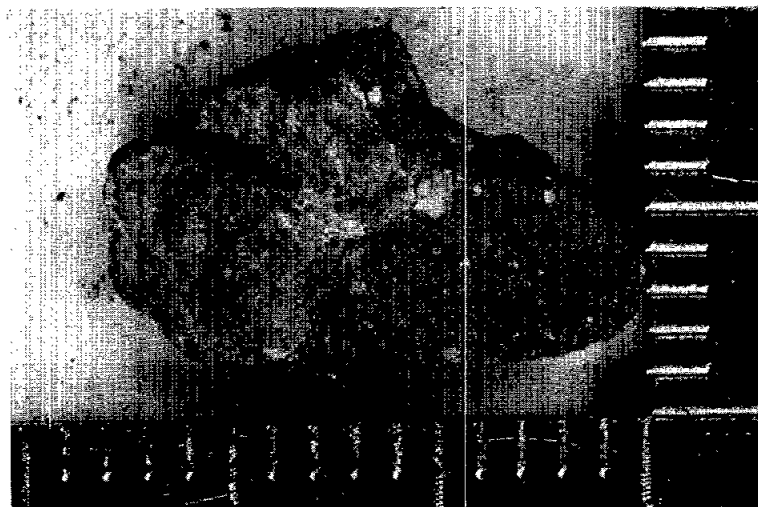
Shape: Angular

Color: Gray

Mineralogy: 50% anorthositic breccia as clast in soil matrix

Remarks: Clast is all plagioclase, annealed texture

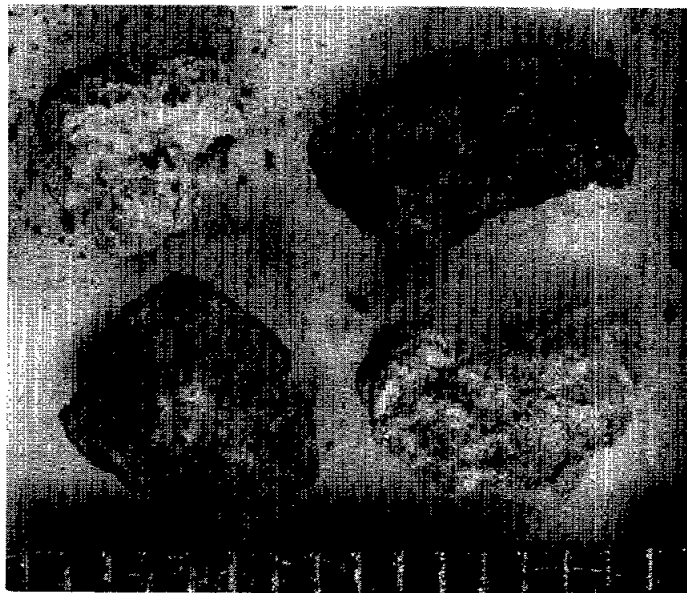
Photo Number: S-73-22619



76504,6

Feldspathic Breccia  
4 particles, 0.59 grams

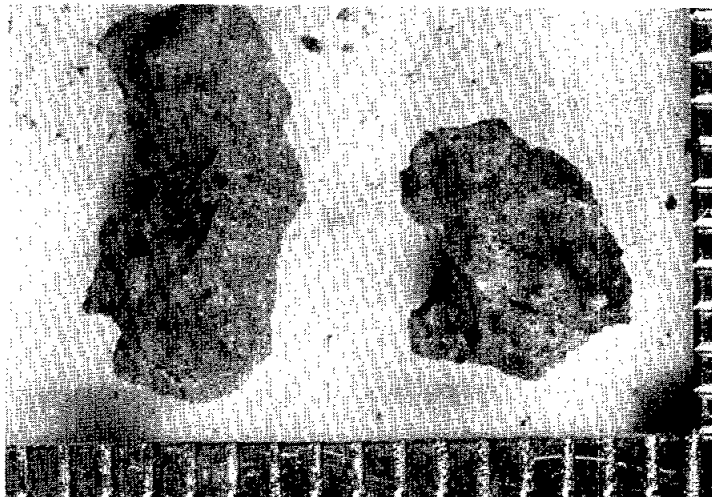
Coherence: Friable  
Shape: Angular to subrounded  
Color: White  
Mineralogy: 80% plagioclase, 10% gray mineral, 10% yellow green mineral.  
Remarks: Each particle is somewhat different texture  
Photo Number: S-73-22620



76504,7

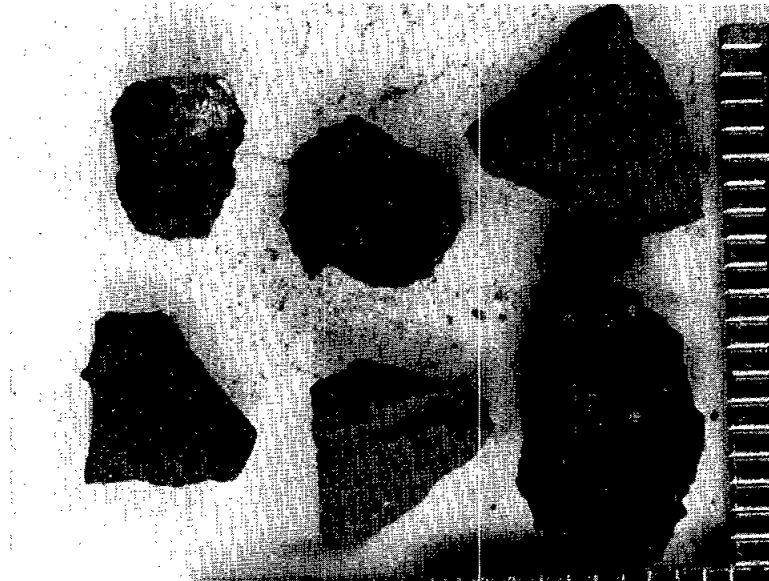
Feldspathic Breccia  
2 particles, 0.39 grams

Coherence: Tough  
Shape: Angular  
Surface: Dirty  
Color: Tannish white  
Mineralogy: 60% plagioclase, 30% gray mineral (orthopyroxene),  
10% yellow green mineral  
Remarks: Grain size is 0.5 mm. Possible hornfelsic texture.  
5% vesicles.  
Photo Number: S-73-22621



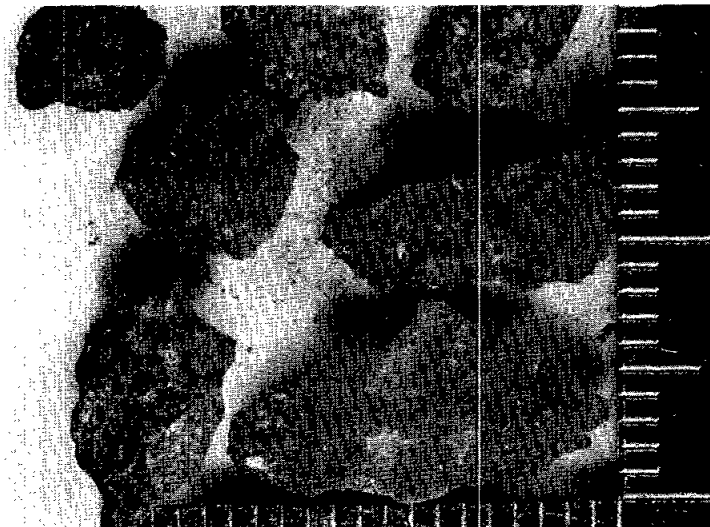
76504,8  
Breccia  
6 particles, 1.75 grams

Coherence: Tough  
Shape: Subangular  
Surface: Dirty  
Color: Dark gray to blue gray  
Mineralogy: 80% plagioclase, 20% glass  
Remarks: Annealed texture  
Photo Number: S-73-22622



76504,9  
Feldspathic Breccia  
7 particles, 1.95 grams

Coherence: Tough  
Shape: Subrounded to angular  
Surface: Dirty  
Color: Tannish white  
Mineralogy: 80% plagioclase, 20% gray mineral or glass  
Remarks: Each particle different from the other. Some have highly annealed texture  
Photo Number: S-73-22623





77514,1

Breccia  
1 particle, 0.55 grams

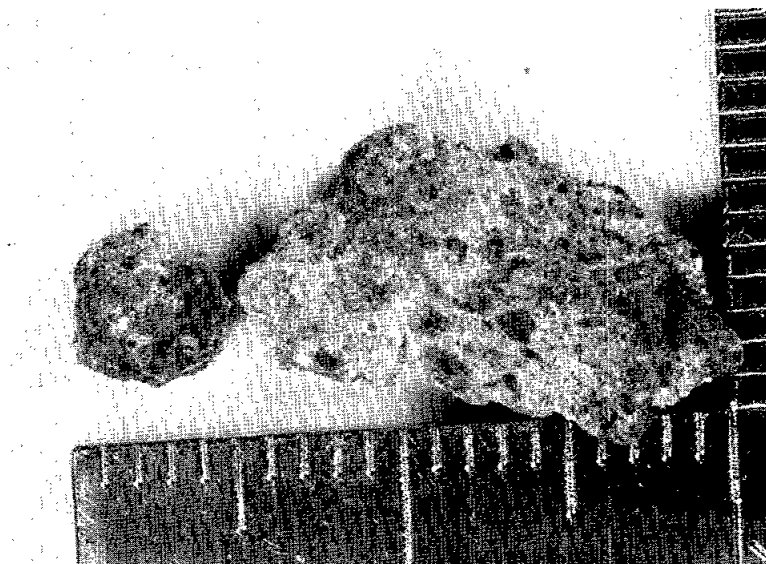
Coherence: Friable  
Shape: Rounded  
Surface: Little droplets of black glass on all sides ~10% surface  
Color: Dark gray  
Mineralogy: 10% clasts (white) in dark aphanitic matrix  
Photo Number: S-73-22592



77514,2

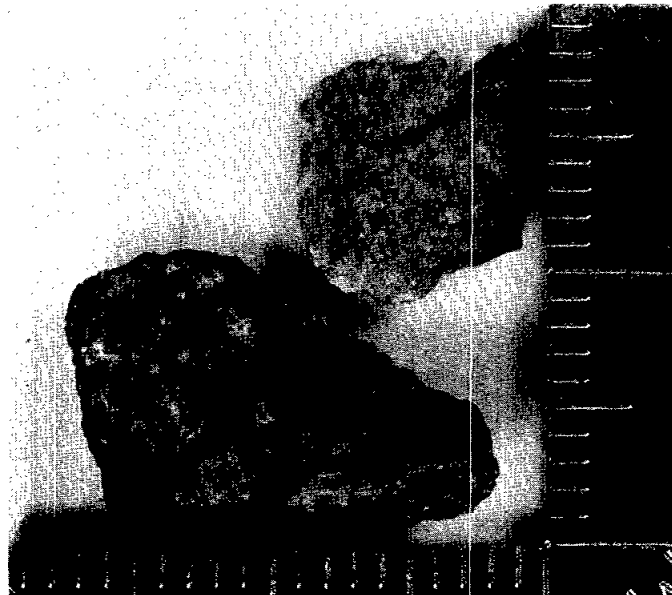
Feldspathic Breccia  
2 particles, 0.65 grams

Coherence: Tough  
Shape: Angular to subrounded  
Surface: One side original surface (rounded)  
Color: White  
Mineralogy: 60% chalky white plagioclase matrix with 10% yellowish green mineral, 10% large plagioclase and 20% large (1-2 mm) gray mineral.  
Photo Number: S-73-22593



77534,1  
Anorthosite  
2 particles, 1.38 grams

Coherence: Tough  
Shape: Angular  
Surface: Zap pits  
Color: Light blue gray  
Mineralogy: 85% plagioclase, 15% orthopyroxene, 1% olivine  
Remarks: Annealed texture, grain size ~0.5 mm  
Photo Number: S-73-22638



77534,2

Feldspathic Breccia  
1 particle, 0.08 grams

Coherence: Friable  
Shape: Angular  
Color: Chalky white  
Mineralogy: 100% plagioclase  
Remarks: Shocked  
Photo Number: S-73-22639



77534,3

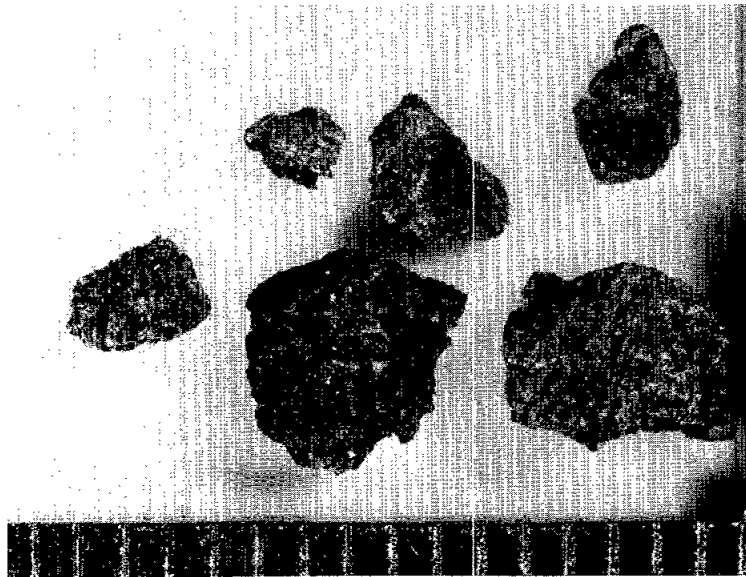
Breccia  
2 particles, 0.37 grams

Coherence: Delicate to tough  
Shape: Irregular  
Surface: Glass coated  
Color: Black  
Mineralogy: 70% dark gray matrix with abundant 30% white clasts  
Remarks: Vesicular glass coat  
Photo Number: S-73-22640



77534,4  
 Basalt  
 6 particles, 0.23 grams

Coherence: Fractured  
 Shape: Angular  
 Color: Light gray  
 Mineralogy: 20% opaque, 40% plagioclase, 40% light brown pyroxene  
 Photo Number: S-73-22641



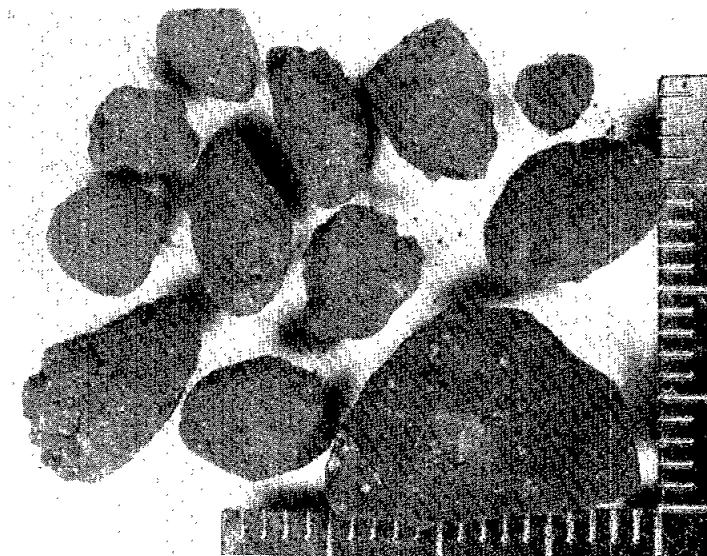
77534,5  
 Feldspathic Breccia  
 5 particles, 2.28 grams

Coherence: Tough  
 Shape: Angular  
 Surface: Dirt on exterior surface  
 Color: Tannish white  
 Mineralogy: 70% plagioclase, 5% opaque, 25% gray mineral (orthopyroxene?)  
 Remarks: 10% vesicles (1 mm with smooth interior walls). One particle has clast contain large (2 mm) plagioclase crystals. This may be a metamorphic rock.  
 Photo Number: S-73-22642



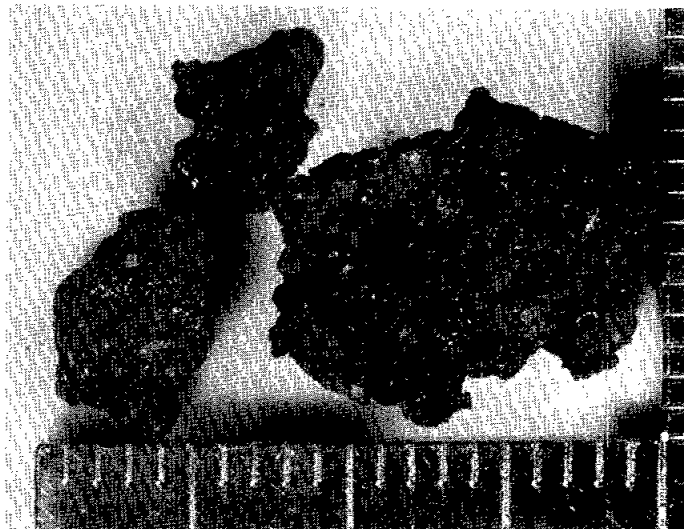
78124,1  
Soil Breccia  
11 particles, 2.06 grams

Coherence: Very friable  
Shape: Rounded  
Color: Gray  
Mineralogy: 100% soil with few clasts  
Photo Number: S-73-22595



78124,2  
Agglutinated Soil  
3 particles, 0.71 grams

Coherence: Delicate  
Shape: Irregular  
Color: Gray  
Mineralogy: 50% glass and 50% soil finely intermixed in many layers  
Remarks: 30% cavities, irregular. The glass is vesicular and has  
shiny surface  
Photo Number: S-73-22596

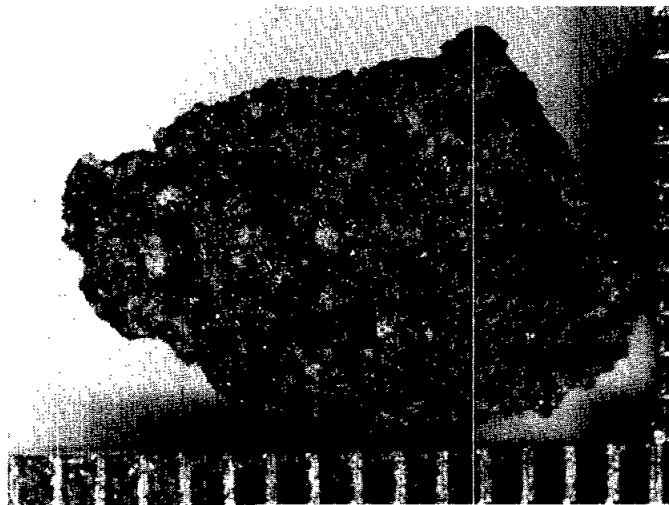


78124,3

Basalt

1 particle, 0.94 grams

Coherence: Tough  
Shape: Subrounded  
Surface: Dirty  
Color: Gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: Grain size 0.5 - 1 mm  
Photo number: S-73-22597



78224,1

Agglutinate

5 particles, 0.46 grams

Coherence: Delicate  
Shape: Irregular  
Color: Dark gray to black  
Mineralogy: Shiny 50% black glass, 50% soil  
Remarks: 30% irregular cavities  
Photo Number: S-73-22611



78224,2  
Soil Breccias  
4 particles, 0.53 grams

Coherence: Very friable  
Shape: Rounded  
Color: Gray  
Mineralogy: Aphanitic, few white mineral patches  
Photo Number: S-73-22612



78224,3  
Basalt  
2 particles, 0.33 grams

Coherence: Tough  
Shape: Rounded  
Surface: Dirty  
Color: Gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: Grain size less than 0.2 mm  
Photo Number: S-73-22613



78234,1

Troctolite  
2 particles, 0.37 grams

Coherence: Coherent, but fractured  
Shape: Angular  
Color: White  
Mineralogy: 40% polygonized yellowish olivine, 60% grayish white plagioclase.  
Remarks: Grain size 3 mm  
Photo Number: S-73-22608



78234,2

Feldspathic Breccia  
2 particles, 0.3 grams

Coherence: Tough  
Shape: Rounded  
Surface: Coated with glass and dirt vanier except for spall zone  
Color: Dark gray  
Mineralogy: 80% plagioclase, 20% gray mineral (orthopyroxene?)  
Photo Number: S-73-22609





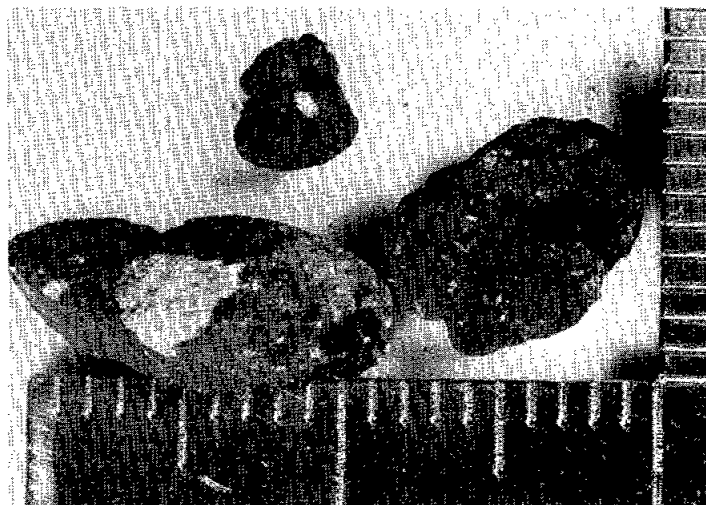
78424,1  
Anorthositic Breccia  
4 particles, 0.1 grams

Coherence: Friable  
Shape: Angular  
Surface: 20% glass on surface  
Color: White  
Mineralogy: 80% chalky white plagioclase, 20% clear glass interlaced  
throughout  
Remarks: Shock vitrified  
Photo Number: S-73-22599



78424,2  
Breccia  
3 particles, 0.59 grams

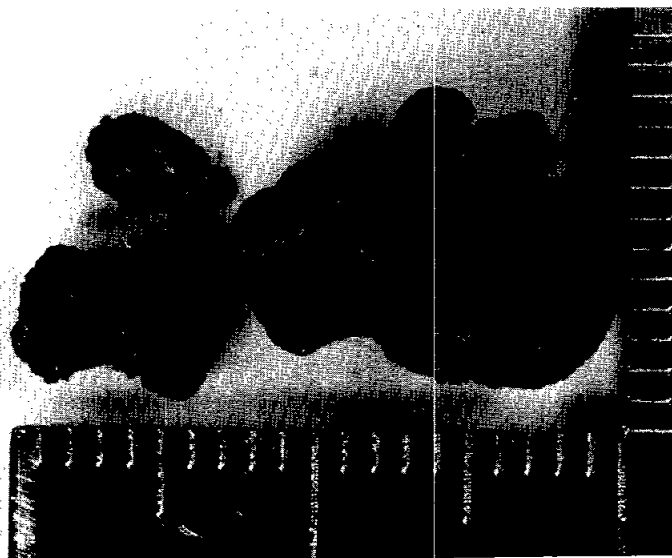
Coherence: Friable  
Shape: Subrounded  
Surface: Black glass on one particle  
Color: Dark gray  
Mineralogy: 20% white clasts in 80% aphanitic soil. Well lithified  
but not melted. Vague. Slickenside.  
Photo Number: S-73-22600



78424,3

Glass Matrix Breccia  
3 particles, 1.11 grams

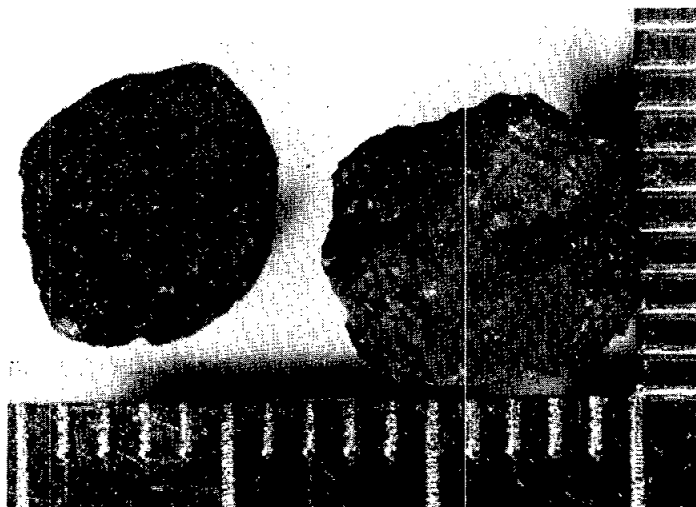
Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: 30% phenocrysts or xenocrysts of plagioclase in 70%  
dark gray glassy matrix (aphanitic)  
Remarks: This may be an unusual basalt  
Photo Number: S-73-22601



78444,1

Soil Breccia  
2 particles, 0.55 grams

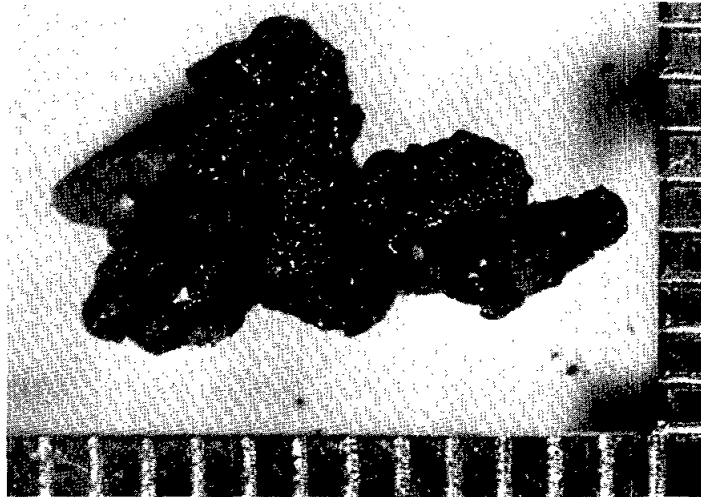
Coherence: Friable  
Shape: Rounded  
Surface: One particle has thin veneer of black shiny glass  
Color: Gray  
Mineralogy: 10% white clasts, 90% aphanitic soil  
Photo Number: S-73-22603



7844,2

Agglutinate  
1 particle, 0.18 grams

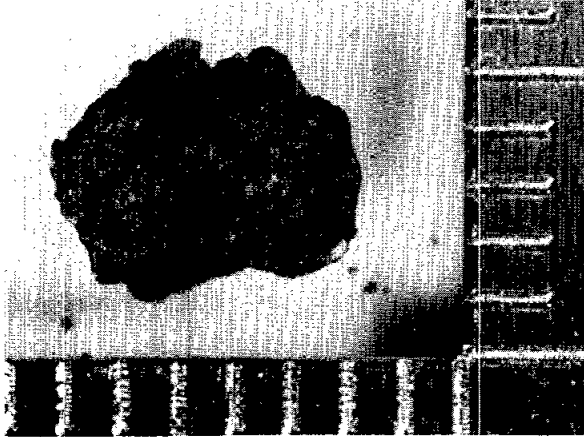
Coherence: Delicate  
Shape: Irregular  
Color: Black  
Mineralogy: 50% shiny black glass and 50% soil  
Remarks: Glass cuts soil clods  
Photo Number: S-73-22604



7844,3

Feldspathic Breccia  
1 particle, 0.11 grams

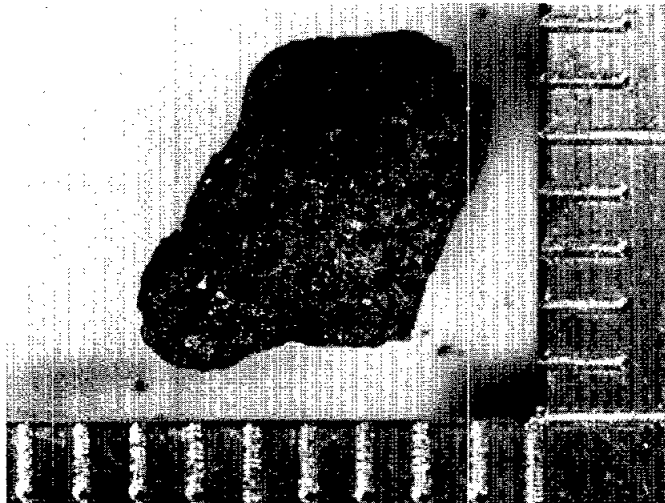
Coherence: Tough  
Shape: Subrounded  
Color: Light blue gray  
Mineralogy: 100% devitrified plagioclase rich glass  
Remarks: Aphanitic  
Photo Number: S-73-22605



7844,4

Basalt  
1 particle, 0.2 grams

Coherence: Tough  
Shape: Rounded  
Surface: 20% dirt covered  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% light honey brown pyroxene, 10% opaque  
Remarks: Grain size  $\approx$  1 mm  
Photo Number: S-73-22606



## PRELIMINARY DESCRIPTION

Not yet dusted, photographed or subdivided

78464

1.303 grams

2 cindery black glass fragments

6 dark gray breccia fragments with white clasts

78484,1

Feldspathic Breccia  
1 particle, 0.12 grams

Coherence: Coherent  
Shape: Angular  
Color: White  
Mineralogy: 70% chalky white matrix with 30% gray mineral (orthopyroxene?)  
          clasts, possibly all plagioclase  
Remarks: Fractured  
Photo Number: S-73-23444



78484,2

Breccia  
1 particle, 0.2 grams

Coherence: Tough  
Shape: Irregular  
Surface: One side coated with vesicular black glass  
Color: Gray  
Mineralogy: 70% aphanitic gray matrix, 20% white clasts, 10%  
          glass clasts of multicolors  
Photo Number: S-73-23445



78504,1

Anorthositic Breccia  
4 particles, 0.920 grams

Coherence: Tough to friable  
Shape: Angular  
Surface: Dirty, one particle has black glass on one side  
Color: White  
Mineralogy: 100% plagioclase  
Remarks: Annealed and shocked textures  
Photo Number: S-73-23420



78504,2

Feldspathic Glass  
3 particles, 0.330 grams

Coherence: Tough  
Shape: Angular  
Color: Light gray  
Mineralogy: ~80% plagioclase, 20% orthopyroxene - devitrified glass  
Remarks: Two zap pits and plagioclase microlites(?)  
Photo Number: S-73-23421



78504,3

Breccias

12 particles, 1.560 grams

Coherence: Tough to friable  
Shape: Angular to subrounded  
Surface: 10% black glass coatings  
Color: Dark gray  
Mineralogy: 70% dark gray matrix with 30% white clasts  
Remarks: Variety of breccia textures. Some may be mature soil breccias that have been lithified.  
Photo Number: S-73-23422

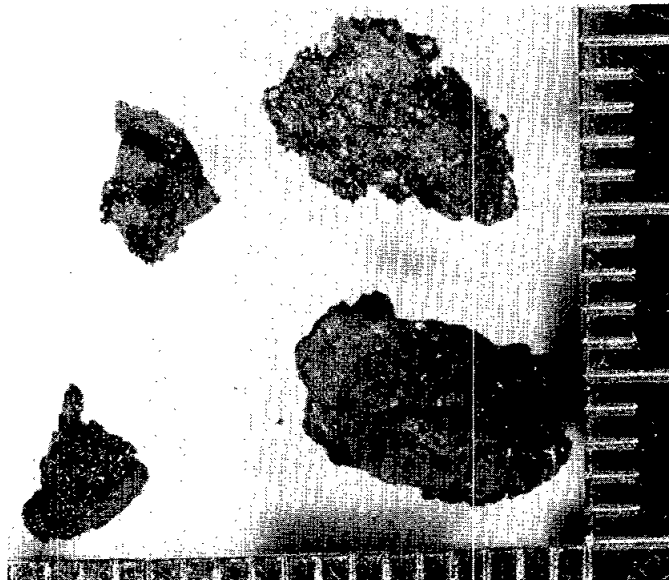


78504,4

Agglutinates

4 particles, 0.350 grams

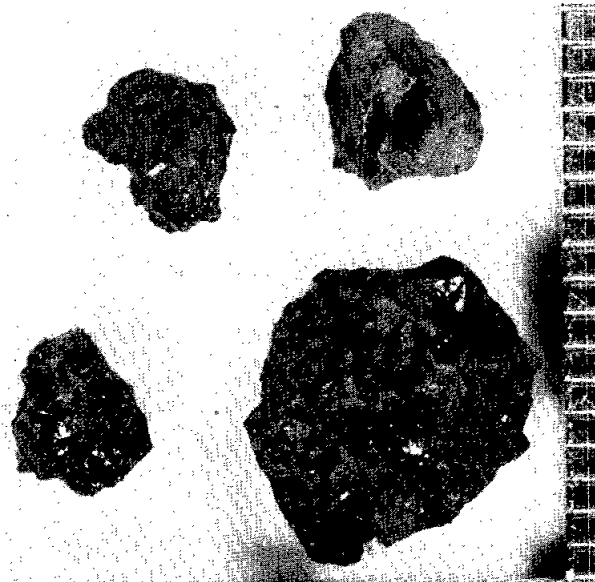
Coherence: Delicate  
Shape: Irregular  
Color: Dark gray  
Mineralogy: 50% black glass, 50% soil breccia  
Photo Number: S-73-23423





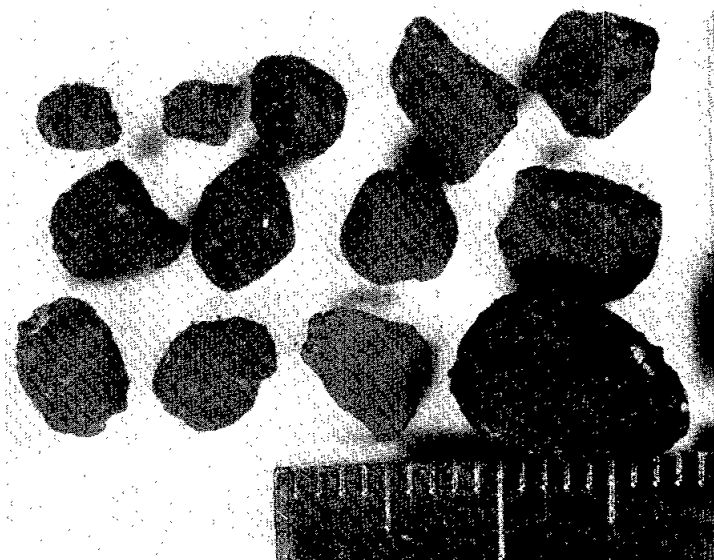
78504,5  
Black Glass  
4 particles, 0.560 grams

Coherence: Tough  
Shape: Blocky and vesicular  
Color: Black  
Mineralogy: 90% glass, 10% vesicles  
Remarks: Vesicles 0.5 to 1.0 mm. Dirt in vesicles. Two particles  
appear devitrified  
Photo Number: S-73-23424



78504,6  
Soil Breccias  
13 particles, 1.530 grams

Coherence: Very friable  
Shape: Rounded  
Color: Light gray  
Mineralogy: 90% aphanitic soil, 5% white plagioclase, 5% dark  
glass spheres  
Photo Number: S-73-23425



78504,7

Basalt

4 particles, 1.930 grams

Coherence: Friable to coherent  
Shape: Angular  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene, 10% opaque  
Remarks: Grain size 1 - 2 mm.  
Photo Number: S-73-23426



78504,8

Basalt

14 particles, 1.930 grams

Coherence: Tough  
Shape: Angular to subrounded  
Surface: 20% dirty  
Color: Light gray  
Mineralogy: 35% plagioclase, 50% light brown pyroxene, 5% olivine,  
10% opaques  
Remarks: Grain size 0.5 mm. Not all grains have olivine  
Photo Number: S-73-23427



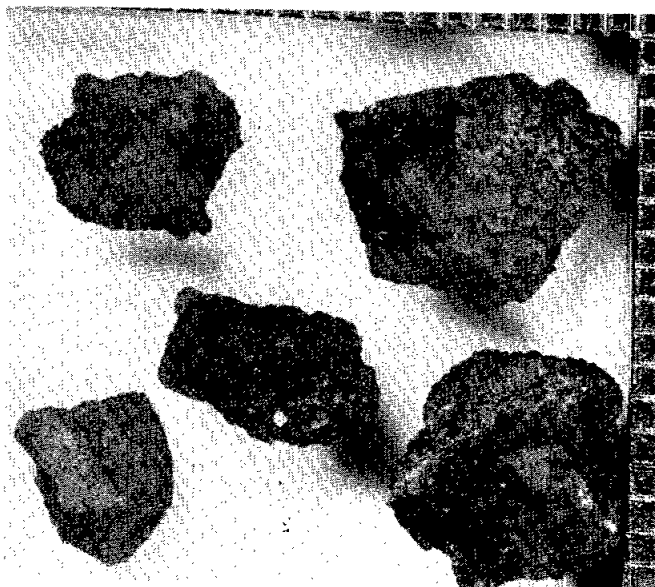
78504,9  
 Basalt  
 20 particles, 3.150 grams

Coherence: Tough  
 Shape: Angular to subrounded  
 Surface: 50% of surface has adhering dirt  
 Color: Dark gray  
 Mineralogy: Aphanitic - some particles possibly ilmenite-rich  
 Remarks: 5% vugs - no vesicles. Some of these particles may  
 just be devitrified black glass  
 Photo Number: S-73-23428



78504,10  
 Breccias  
 5 particles, 5.240 grams

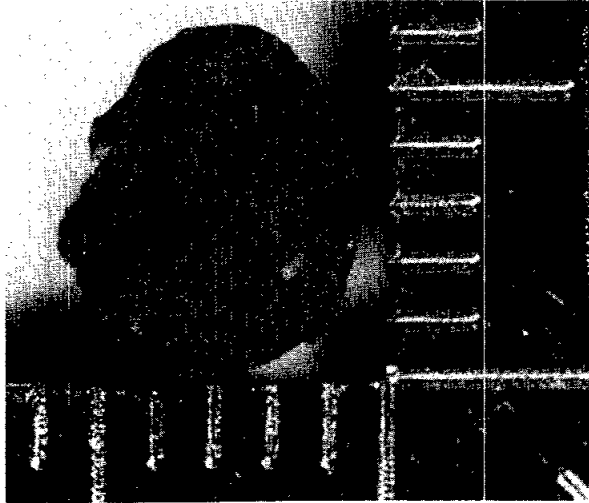
Coherence: Friable to coherent  
 Shape: Irregular to angular  
 Color: Gray  
 Mineralogy: Mostly dark minerals - not feldspathic  
 Remarks: Five different types of breccias - not soil or dark  
 matrix type  
 Photo Number: S-73-23429



78504,11

Soil Breccia with Norite Clast  
1 particle, 1.020 grams

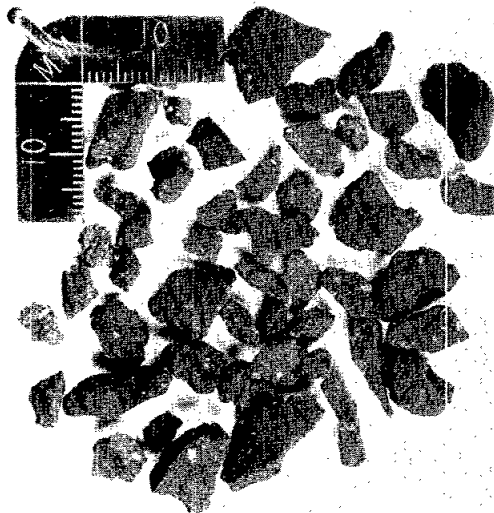
Coherence: Friable  
Shape: Rounded  
Mineralogy: ~80% soil matrix, 20% clasts of 80% plagioclase, 20% gray mineral  
Remarks: Broken corner reveals clast which may make up majority of breccia. Grain size 1-2 mm.  
Photo Number: S-73-23430



79124,1

Van Serg Breccia  
50 particles, 11.81 grams

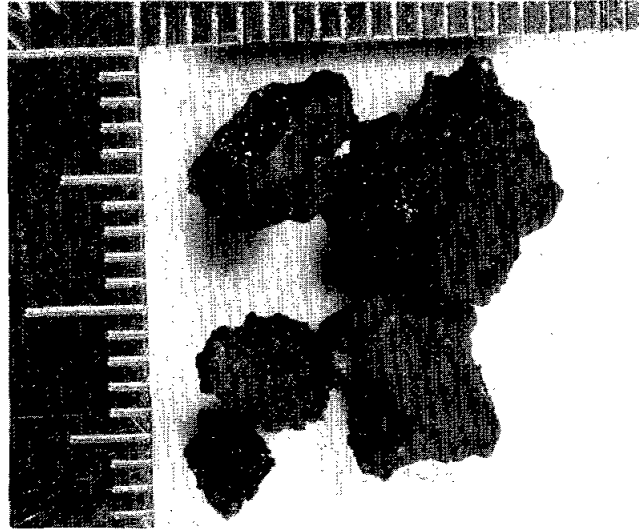
Coherence: Tough  
Shape: Angular  
Color: Black  
Mineralogy: 90% aphanitic black matrix with 8% white clasts (1 mm) and 2% red glass clasts  
Remarks: All alike, this rock breaks into slabby plates  
Photo Number: S-73-25428



79124,2

Vesicular Glass  
5 particles, 0.80 grams

Coherence: Delicate  
Shape: Irregular  
Color: Black (transparent edges are deep reddish)  
Mineralogy: 90% glass, 10% Van Serg breccia  
Remarks: 20% vesicles (all sizes)  
Photo Number: S-73-25429



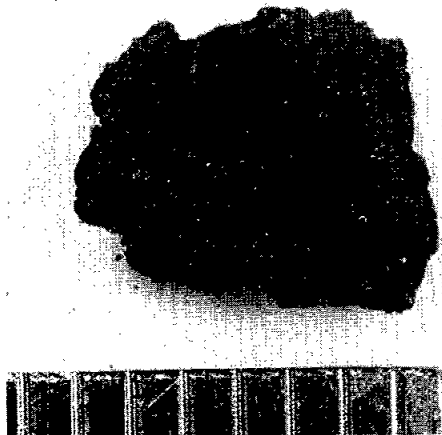
79124,3  
Feldspathic Basalt  
1 particle, 0.13 grams

Coherence: Tough  
Shape: Subangular  
Surface: Dirty  
Color: Tannish white  
Mineralogy: 80% plagioclase, 20% gray mineral  
Remarks: Annealed or metamorphic texture  
Photo Number: S-73-25430



79124,4  
Basalt  
1 particle, 0.13 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: Aphanitic  
Remarks: Shiny laths of some unknown mineral  
Photo Number: S-73-25431



79224,1

Glass  
1 particle, 0.14 grams

Coherence: Friable surface  
Shape: Irregular - fluted  
Surface: Coated with black cindery material  
Color: Very black  
Remarks: 10% vesicles visible on broken end. This may be a volcanic  
cinder of the elusive dark mantle!  
Photo Number: S-73-23447



79224,2

Basalt  
4 particles, 0.21 grams

Coherence: Friable  
Shape: Angular  
Surface: Hackly  
Color: Light gray  
Mineralogy: 60% chalky plagioclase, 20% opaque, 20% brown pyroxene  
Remarks: Grain size 1 mm  
Photo Number: S-73-23448

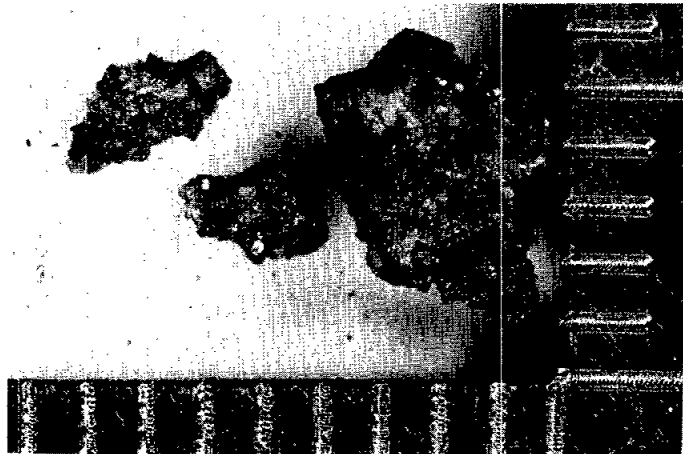


79224,3

Basalt

3 particles, 0.08 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaque  
Remarks: Texture equigranular. Grain size 2 mm  
Photo Number: S-73-23449

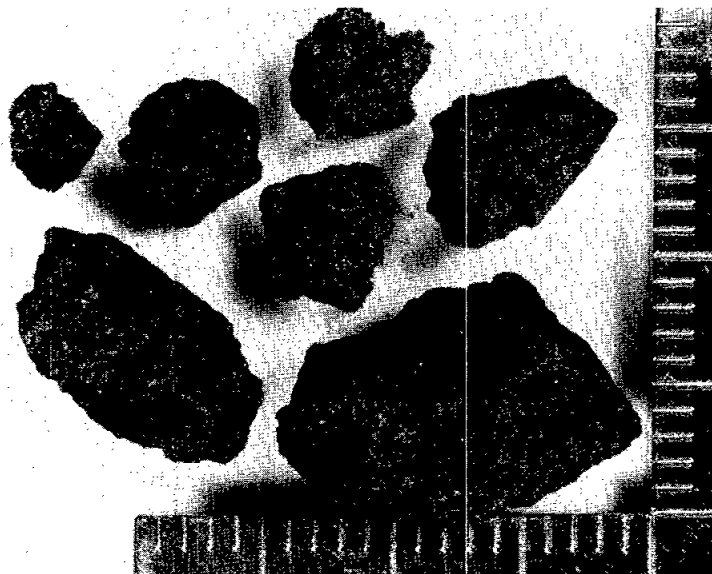


79224,4

Basalt

7 particles, 2.43 grams

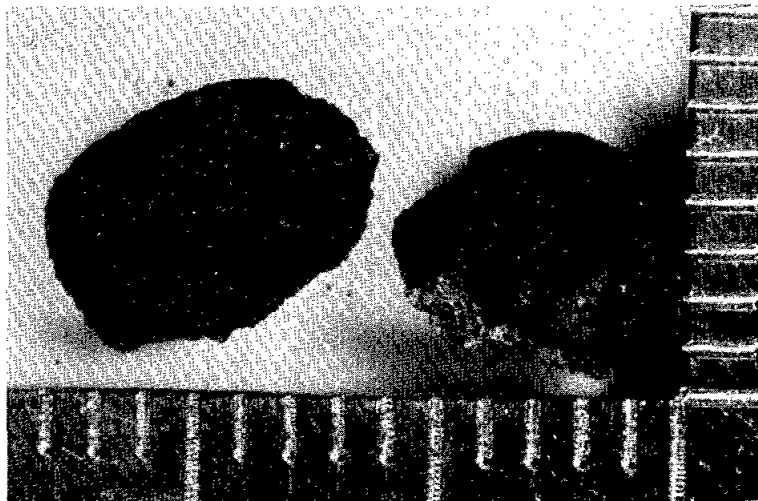
Coherence: Tough  
Shape: Subangular  
Color: Gray  
Mineralogy: 45% plagioclase, 45% brown pyroxene, 10% opaque  
Remarks: Grain size to 0.5 mm. Aphanitic.  
Photo Number: S-73-23450





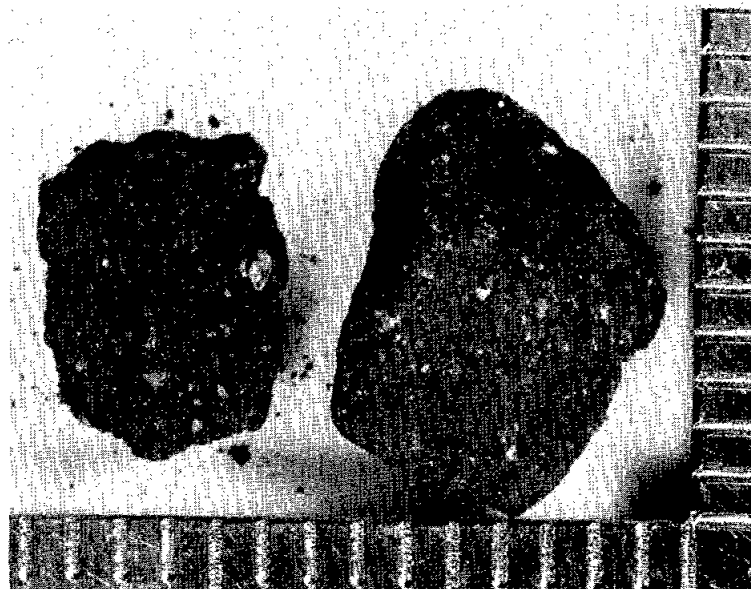
79224,5  
Soil Breccia  
2 particles, 0.23 grams

Coherence: Very friable  
Shape: Rounded  
Color: Dark gray  
Mineralogy: Aphanitic  
Remarks: One particle has basalt clasts as ,2. Very dark soil.  
Photo Number: S-73-23451



79224,6  
Breccia  
2 particles, 0.31 grams

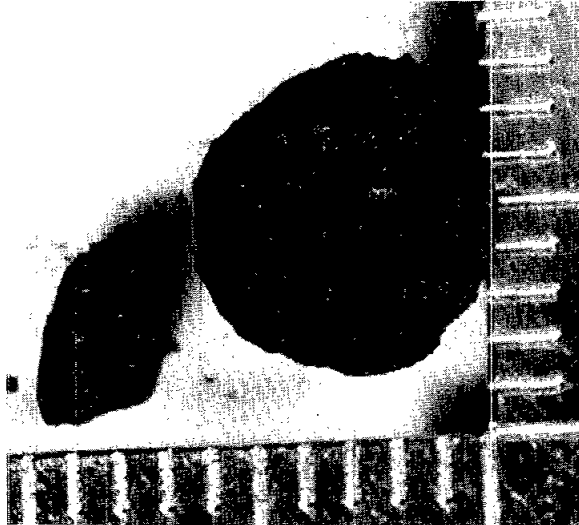
Coherence: Tough  
Shape: Subangular  
Color: Dark gray  
Mineralogy: 10% white clasts in 90% dark aphanitic matrix  
Photo Number: S-73-23452



79224,7

Breccia  
2 particles, 0.23 grams

Coherence: Friable  
Shape: Rounded  
Color: Black  
Mineralogy: 100% aphanitic soil  
Remarks: If there is a dark mantle - this is it!  
Photo Number: S-73-23453



79224,8

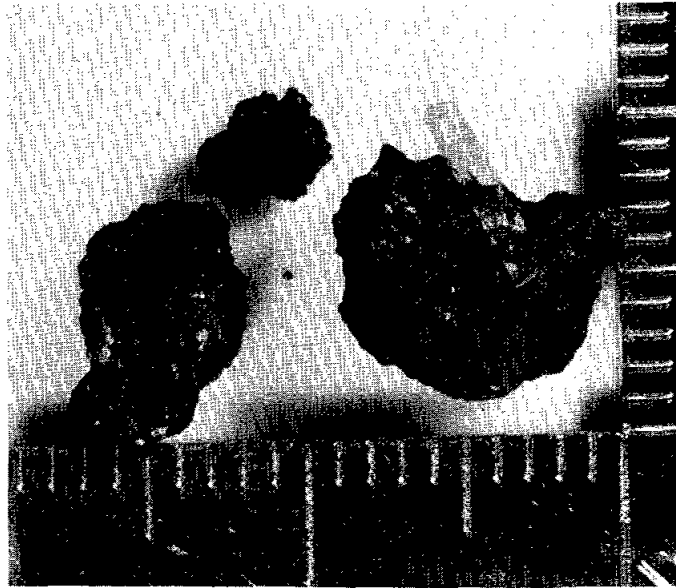
Glass  
4 particles, 0.71 grams

Coherence: Tough but fractured  
Shape: Angular  
Color: Black to very dark green  
Mineralogy: 50% vesicular black glass, 50% dense dark green  
Photo Number: S-73-23454



79224,9  
Breccia  
3 particles, 0.76 grams

Coherence: Tough  
Shape: Irregular  
Color: Dark gray  
Mineralogy: Aphanitic dark glassy matrix, possible devitrified glass  
Photo Number: S-73-23455



79244,1  
Soil Breccias  
18 particles, 4.490 grams

Coherence: Very friable  
Shape: Rounded  
Surface: Grainy  
Color: Gray  
Mineralogy: Aphanitic with 10% white clasts  
Photo Number: S-73-23467

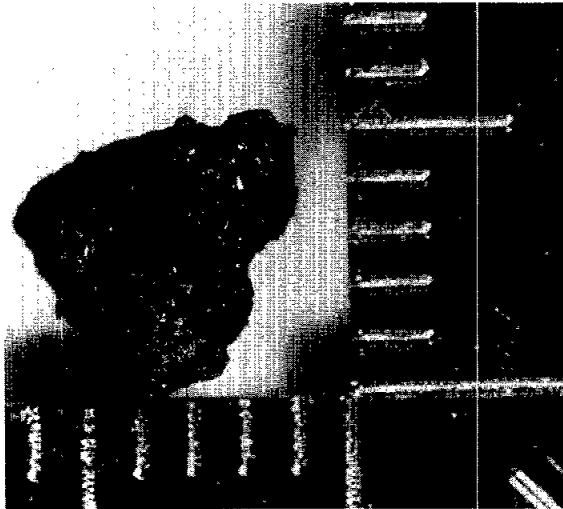


79244,2

Breccia

1 particle, 0.090 grams

Coherence: Friable  
 Shape: Irregular  
 Surface: 50% glass coated  
 Color: Dark gray  
 Mineralogy: 80% dark aphanitic soil, with 20% black vesicular glass coating  
 Photo Number: S-73-23468



79244,3

Glass

1 particle, 0.070 grams

Coherence: Tough  
 Shape: Hemispherical  
 Surface: Glossy  
 Color: Black  
 Mineralogy: 100% black glass  
 Remarks: Broken piece of outer and inner walls of a glass  
 bubble, radius  $\sim$ 1 cm.  
 Photo Number: S-73-23469

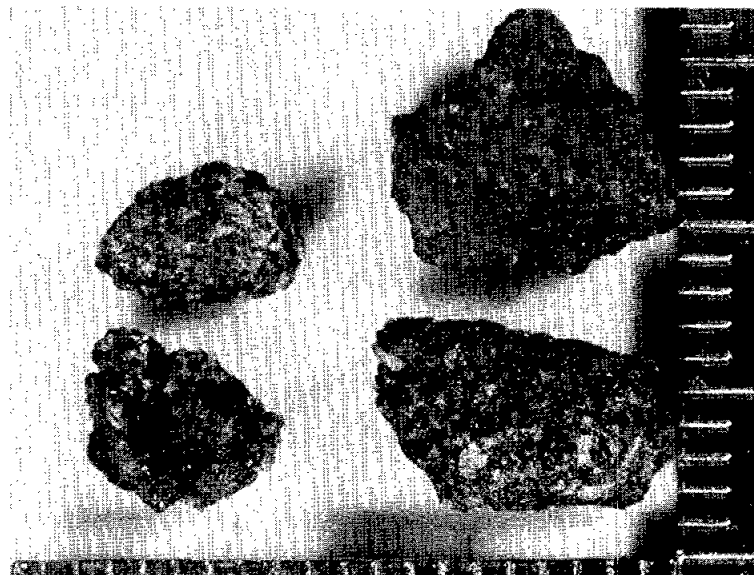


79244,4

Basalt

4 particle, 1.340 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly  
Color: Light gray  
Mineralogy: 45% plagioclase, 45% light brown pyroxene,  
10% opaque  
Remarks: Grain size 1 mm  
Photo Number: S-73-23470

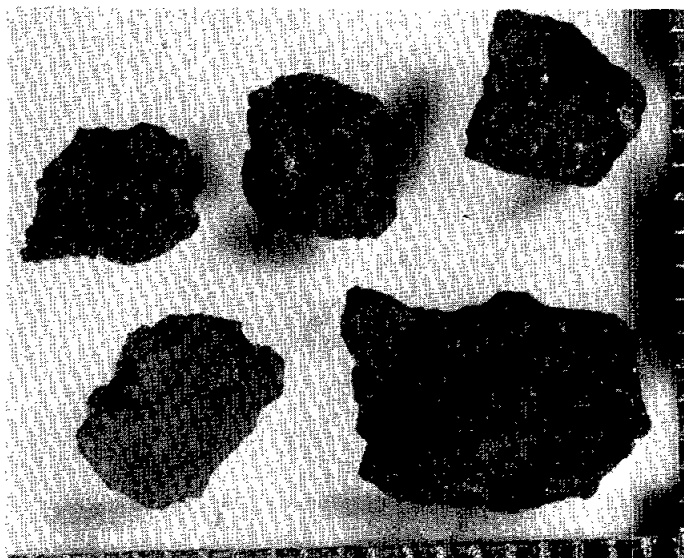


79244,5

Basalt

5 particles, 0.990 grams

Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: Aphanitic  
Remarks: No olivine  
Photo Number: S-73-23471

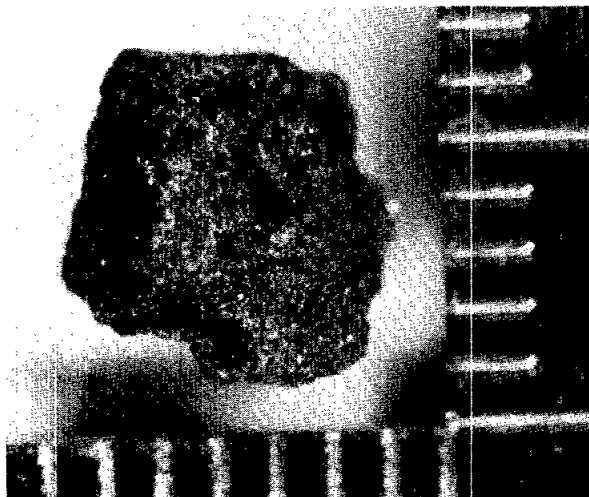


79244,6

Basalt

1 particle, 0.230 grams

Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: 60% plagioclase, 40% pyroxene (gray to brown), no opaques?  
Remarks: Grain size 0.5 mm  
Photo Number: S-73-23472



79244,7

Breccia

1 particle, 0.090 grams

Coherence: Tough  
Shape: Angular  
Color: Dark gray  
Mineralogy: 30% white clasts in 70% dark matrix  
Photo Number: S-73-23473



79244,8  
Norite?  
1 particle. 0.690 grams

Coherence: Tough  
Shape: Rounded  
Surface: 80% covered with glass and dirt coat  
Color: Light gray  
Mineralogy: 60% plagioclase, 20% gray orthopyroxene, 20% light green mineral  
Remarks: Grain size 1 mm  
Photo Number: S-73-23474



79244,9  
Anorthosite  
3 particles, 0.380 grams

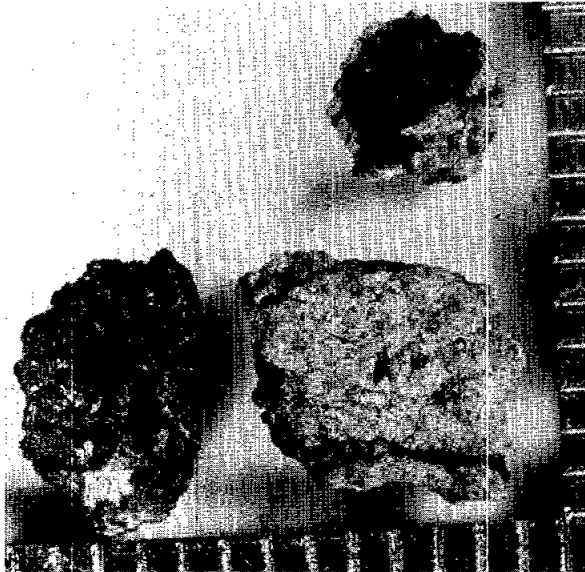
Coherence; Tough  
Shape: Angular  
Color: White  
Mineralogy: 80% plagioclase, 20% grayish green mineral  
Remarks: Annealed brecciated texture. Grain size ~0.5 mm  
Photo Number: S-73-23475



79244,10

Feldspathic Breccia  
3 particles, 0.300 grams

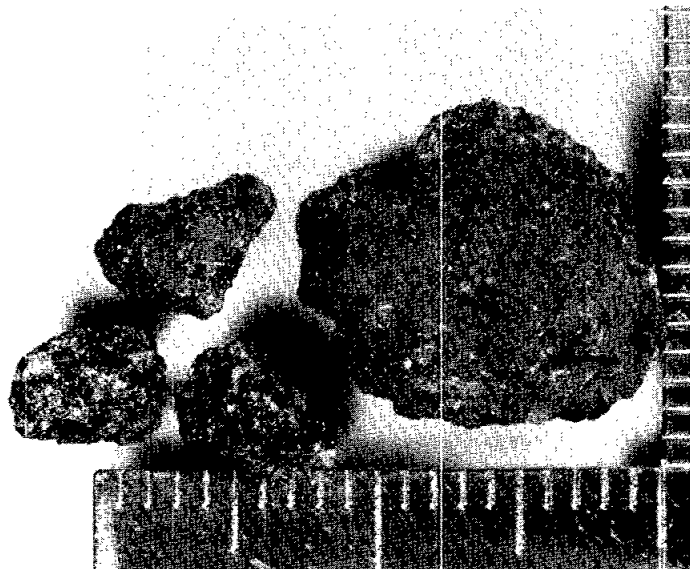
Coherence: Delicate  
Shape: Irregular  
Color: White  
Mineralogy: 80-90% chalky white plagioclase, 10% black glass  
Remarks: Marbled texture  
Photo Number: S-73-23476



79264,1

Basalt  
4 particles, 1.97 grams

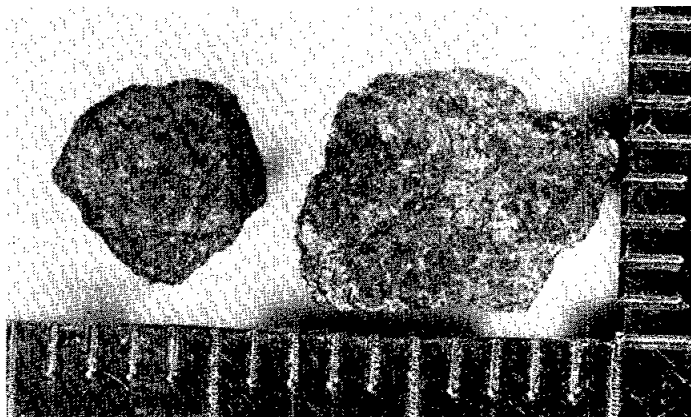
Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: 45% plagioclase, 45% light to dark brown pyroxene,  
10% opaques  
Remarks: Grain size ~1 mm  
Photo Number: S-73-23432





79264,2  
Basalt  
2 particles, 0.29 grams

Coherence: Tough  
Shape: Subrounded  
Color: Light gray  
Mineralogy: 50% plagioclase, 40% pyroxene, 10% opaque  
Remarks: Grain size 0.5 mm  
Photo Number: S-73-23433



79264,3  
Basalt  
9 particles, 2.33 grams

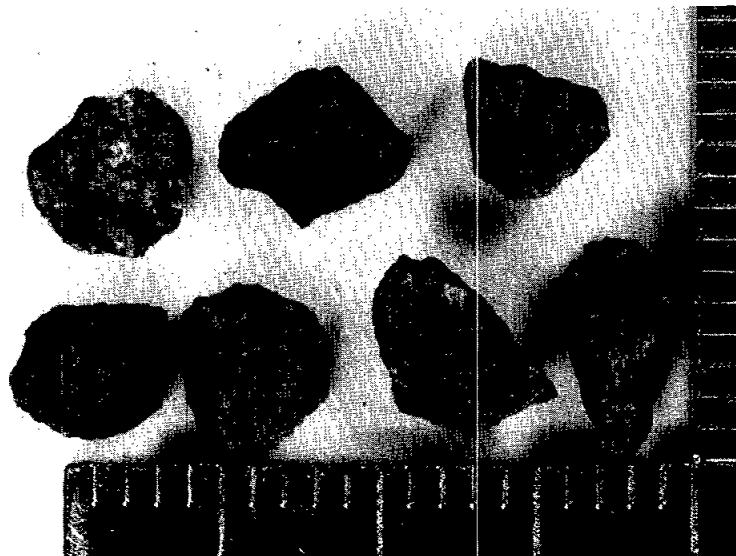
Coherence: Tough  
Shape: Rounded  
Surface: Dirty  
Color: Gray  
Mineralogy: 45% plagioclase, 45% pyroxene, 10% opaque  
Remarks: Grain size aphanitic to 0.5 mm. A few grains have trace of olivine.  
Photo Number: S-73-23434



79264,4

Anorthosite  
7 particles, 0.29 grams

Coherence: Tough  
Shape: Angular  
Surface: Dirty  
Color: Light gray  
Mineralogy: 80% plagioclase, 20% gray mineral  
Remarks: Annealed brecciated texture  
Photo Number: S-73-23435



79264,5

Anorthosite  
1 particle, 0.95 grams

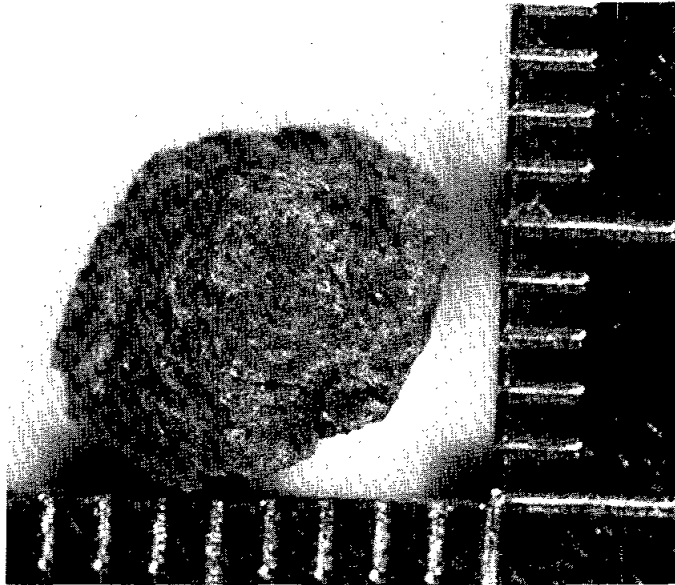
Coherence: Tough  
Shape: Angular  
Color: Tannish white  
Mineralogy: 80% plagioclase, 10% gray pyroxene, 8% light brown  
pyroxene, 2% opaques  
Remarks: Grain size of plagioclase and opaques is 1-2 mm and pyroxene  
is 0.2 mm. Annealed breccia texture.  
Photo Number: S-73-23436



79264,6

Anorthositic Breccia  
1 particle, 0.22 grams

Coherence: Tough  
Shape: Subrounded  
Color: Tannish white  
Mineralogy: 80% plagioclase, 8% gray (orthopyroxene), 8% greenish  
(olivine) and 4% opaque  
Remarks: Annealed breccia texture  
Photo Number: S-73-23437



79264,7

Basalt  
5 particles, 0.36 grams

Coherence: Tough  
Shape: Angular  
Surface: Hackly  
Color: Light gray  
Mineralogy: 55% chalky white plagioclase, 25% opaques, 20% pyroxene  
Photo Number: S-73-23438



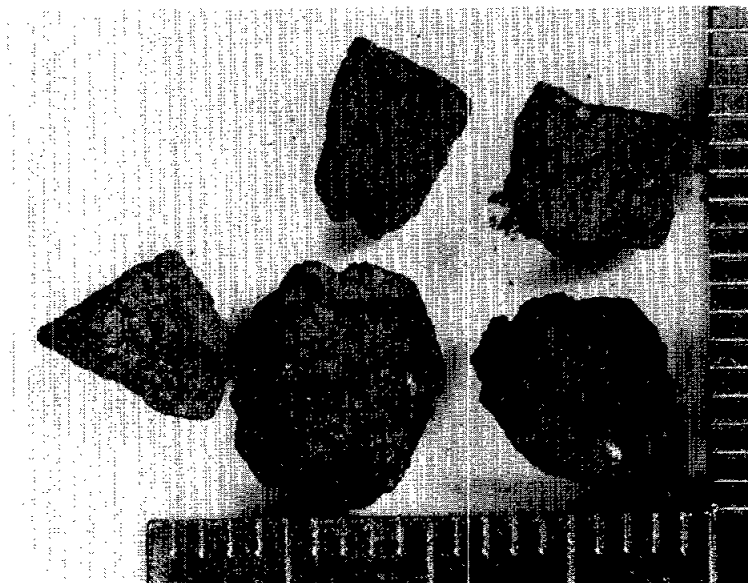
79264,8  
Soil Breccias  
6 particles, 0.76 grams

Coherence: Friable to very friable  
Shape: Rounded  
Surface: Grainy  
Color: Light gray  
Mineralogy: Aphanitic with 10% white clasts  
Photo Number: S-73-23439



79264,9  
Basalt  
5 particles, 1.25 grams

Coherence: Tough  
Shape: Angular to subangular  
Surface: Dirty  
Color: Gray  
Mineralogy: Aphanitic with 15% olivine phenocrysts.  
Remarks: No vugs  
Photo Number: S-73-23440

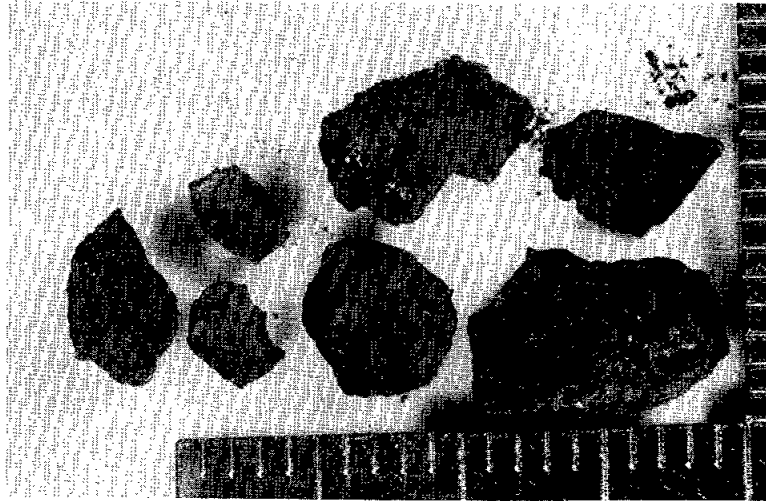


79264,10

Glass

7 particles, 0.77 grams

Coherence: Tough  
Shape: Blocky, one is plate like  
Surface: Dirty  
Color: Dark gray  
Mineralogy: All glass  
Remarks: Different colors (all dark)  
Photo Number: S-73-23441



79264,11

Breccia

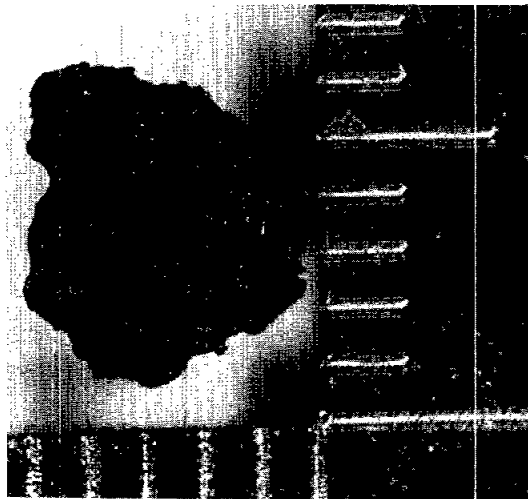
5 particles, 1.29 grams

Coherence: Friable to tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: Variable texture and composition  
Photo Number: S-73-23442



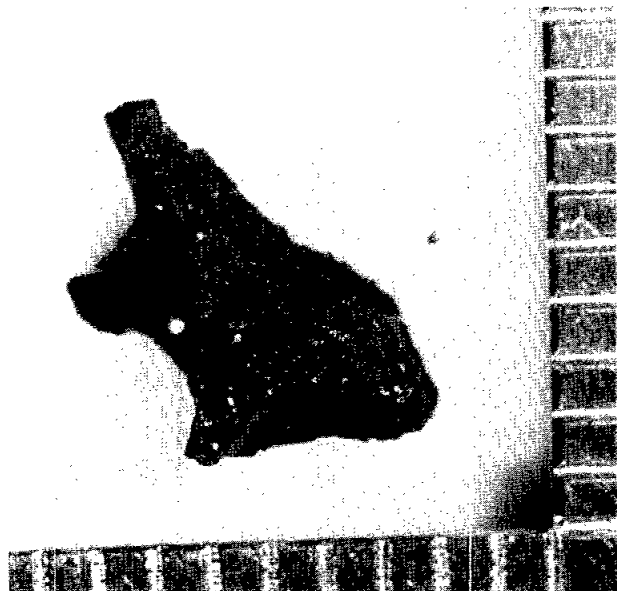
79514,1  
Basalt  
1 particle, 0.12 grams

Coherence: Tough  
Shape: Rounded  
Color: Dark gray  
Mineralogy: 30% plagioclase, 60% pyroxene, 10% opaque  
Remarks: Grain size less than 0.5 mm  
Photo Number: S-73-23457



79514,2  
Glass  
1 particle, 0.09 grams

Coherence: Tough  
Shape: Irregular  
Surface: Smooth walls of vesicles  
Color: Shiny black  
Mineralogy: All glass  
Remarks: Large vesicles define walls of particles  
Photo Number: S-73-23458



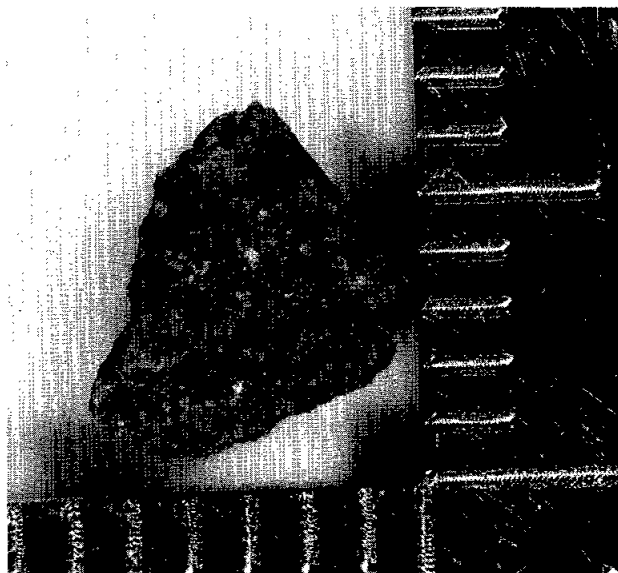
79514,3  
Basalt  
2 particles, 0.78 grams

Coherence: Tough  
Shape: Rounded  
Color: Gray  
Mineralogy: 45% plagioclase, 45% pyroxene, 10% opaque  
Remarks: Grain size ~0.5 mm  
Photo Number: S-73-23459



79514,4  
Anorthosite  
1 particle, 0.09 grams

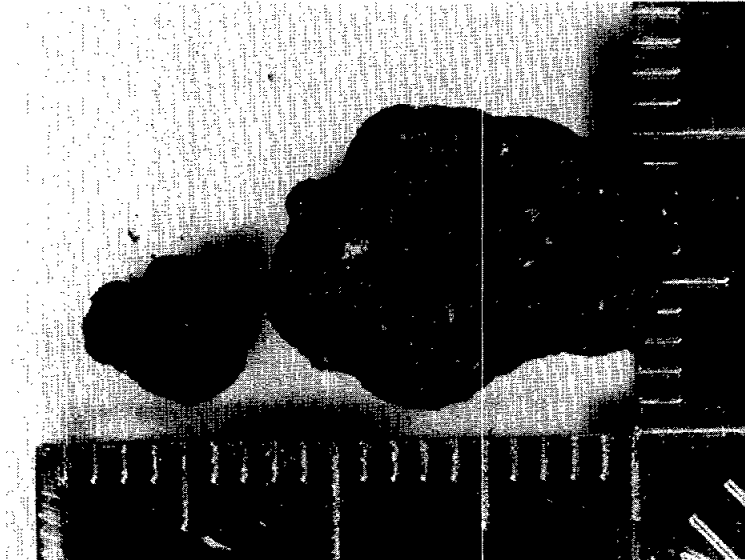
Coherence: Tough  
Shape: Subangular to subrounded  
Color: Tannish white  
Mineralogy: 90% plagioclase, 10% gray mineral  
Remarks: Zap pits. Annealed texture  
Photo Number: S-73-23460



79514,5

Soil Breccia  
2 particles, 0.93 grams

Coherence: Soft and friable  
Shape: Rounded  
Color: Light gray  
Mineralogy: Aphanitic  
Remarks: Large particles have glass splashes on surface  
Photo Number: S-73-23461



79514,6

Breccia  
2 particles, 1.85 grams

Coherence: Tough  
Shape: Angular to subrounded  
Color: Gray  
Mineralogy: Many (~50%) basaltic clasts visible in glass matrix breccia. These two were different from all other and from each other.  
Photo Number: S-73-23462





79514,7  
Breccia  
3 particles, 2.5 grams

Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: 15% light clasts in 85% aphanitic dark matrix  
Remarks: Similar to ,8 and ,9.  
Photo Number: S-73-23463



79514,8  
Van Serg Breccia  
8 particles, 2.93 grams

Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: Same as ,7 and ,9  
Photo Number: S-73-23464



79514,9  
Van Serg Breccia  
18 particles, 2.69 grams

Coherence: Tough  
Shape: Subrounded  
Color: Gray  
Mineralogy: Same as ,7 and ,8  
Photo Number: S-73-23465

