

TABLE 5.6  
Radiometric Ages of the Oldest Lunar Rocks

Mission	Sample no.	Rock type <sup>a</sup>	Material dated <sup>b</sup>	Method	Age (Ga) <sup>c</sup>	Source
Apollo 15	15455	anorthosite clast	3	Rb-Sr	4.42 ± 0.10	Nyquist et al., 1979a
Apollo 16	67435	plagioclase clast	pl	Ar-Ar	4.35 ± 0.05	Dominik and Jessberger, 1978
Apollo 17	72417	dunitite clast	11	Rb-Sr	<u>4.47 ± 0.10</u>	Papanastassiou and Wasserburg, 1975
	73215	feldspathic clast	wr	Ar-Ar	4.22 ± 0.03	Jessberger, Kirsten, and Staudacher, 1977
				Ar-Ar	4.05 ± 0.05	Jessberger, Kirsten, and Staudacher, 1977
	73217	granitoid clast	4z	U-Pb	4.36 ± 0.02	Compston, Williams, and Meyer, 1984
	73255	norite clast anorthositic gabbro clast	3	Sm-Nd	4.23 ± 0.05	Carlson and Lugmair, 1981
			wr	Ar-Ar	4.20 ± 0.01	Staudacher et al., 1979
	73263	anorthosite clast	wr	Ar-Ar	4.23 ± 0.05	G. A. Schaeffer and Schaeffer, 1977
	76503	anorthosite clast	wr	Ar-Ar	4.23 ± 0.01	O. A. Schaeffer, Husain, and Schaeffer, 1976
	76535	troctolite	5	Sm-Nd	<u>4.26 ± 0.06</u>	Lugmair et al., 1976
				10	Rb-Sr	<u>4.51 ± 0.07</u>
			wr	K-Ar	4.27 ± 0.08	Bogard et al., 1975
				Ar-Ar	4.16 ± 0.04	Huneke and Wasserburg, 1975
			wr	Ar-Ar	<u>4.19 ± 0.02</u>	Husain and Schaeffer, 1975
				Ar-Ar	4.20 ± 0.03	Husain and Schaeffer, 1975
			pl	Ar-Ar	<u>4.19 ± 0.02</u>	Husain and Schaeffer, 1975
	77215	norite breccia clast	5	Sm-Nd	<u>4.37 ± 0.07</u>	Nakamura et al., 1976
				8	Rb-Sr	<u>4.33 ± 0.04</u>
pl			Ar-Ar	3.92 ± 0.03	Stettler et al., 1978	
wr			Ar-Ar	3.99 ± 0.03	Stettler et al., 1974	
wr			Ar-Ar	3.97 ± 0.03	Stettler et al., 1974	
wr			Ar-Ar	3.90 ± 0.03	Stettler et al., 1974	
78236			norite	9	Sm-Nd	<u>4.34 ± 0.05</u>
	3	Sm-Nd		<u>4.43 ± 0.05</u>	Nyquist et al., 1981	
	3	Rb-Sr		<u>4.29 ± 0.02</u>	Nyquist et al., 1981	
	pl	Ar-Ar		<u>ca. 4.36</u>	Nyquist et al., 1981	
Luna 20	L2015	anorthosite	wr	Ar-Ar	4.40 ± 0.10	Cadogan and Turner, 1977
	22013	anorthosite, dark	wr	Ar-Ar	4.36	Huneke and Wasserburg, 1979
		anorthosite, light	wr	Ar-Ar	4.51	Huneke and Wasserburg, 1979

<sup>a</sup>Table 5.3.

<sup>b</sup>Numbers represent number of points in isochron; wr, whole rock; pl, plagioclase; z, zircon. All of the dated samples were found as clasts in larger pieces of breccia or as fragments in the lunar soil (76535 and Luna 20 samples).

<sup>c</sup>All ages calculated with the decay constants in Table 3.1. Errors are at the 95% confidence level (two standard deviations). Ages underlined are shown as figures. Ages are based on either isochron (Rb-Sr, Sm-Nd) or <sup>40</sup>Ar/<sup>39</sup>Ar age-spectrum (Ar-Ar) methods, except that one conventional K-Ar age has been included for sample 76535 and one U-Pb discordia age has been included for sample 73217.