Table 2.--Proposed genetic classification of the meteorites

Distinguishing chemical characteristics	Volatile-rich meteorites (≳8 percent H_2O)	Volatile - poor meteorites (≲2 percent H_2O)							
	Calcium - poor (< 5 percent CaO)					Calcium - rich (>5 percent CaO)			
Textural-structural groups	Mineralogical or compositional class								
Chondrite	Carbonaceous (Type II)[1/]	Pigeonite[2, 3/]	Hypersthene[2/]	Bronzite[2/]	Enstatite	- - - - -	- - - - -		
Achondrite[4/]	a/ Carbonaceous (Type I)[1/]	b/ Olivine (Chassigny)[5/] Pigeonite	Hypersthene	Bronzite[6/]	Enstatite	c/ Diopside-olivine (Nakhla, Lafayette)	Pyroxene-plagioclase: Hypersthene-anorthite (Howardite)[7/]	Pyroxene-plagioclase: Pigeonite-anorthite (Eucrite)	Augite (Angra)
Stony-iron	- - - - -	?[8/]	Siderophyre[9/]	Pallasite[10/] (Ga-Ge III) Lodranite[11/]	?[12/]	- - - - -	- - - - -		- - - - -
Iron	- - - - -	?[13/]	Ga-Ge II[14/]	Ga-Ge III[14/] Ga-Ge IV (?)	Ga-Ge I[14/]	- - - - -	- - - - -		- - - - -
Inferred source	Comets	Asteroids				Mars ?	Moon		?

1/. Classification of Wiik (1956).
2/. Olivine is an essential mineral, but for the purpose of classification, only the name of the characteristic mineral is used.
3/. Includes Type III carbonaceous chondrites of Wiik (1956), and C-3 chondrites of Van Schmus and Wood (1967).
4/. Achondritic materials may be assigned to one of three groups:
  a. Relatively low temperature silicates that may be serpentinized or chloritized carbonaceous chondrite material;
  b. High temperature silicates that may have been recrystallized from mineralogically similar parent chondrite materials;
  c. High temperature silicates that may have been differentiated from unsampled and perhaps now non-existent parent chondrite materials.
5/. Olivine containing "nascent chondrules" (Jérémine and others, 1962).
6/. Not recognized as a discrete class, but may be represented by bronzite achondrite fragments in Breitscheid polymict(?) bronzite chondrite, described by Wlotzka (1963).
7/. One howardite, Frankfort, contains less than 5 percent CaO (Mason, 1967b).
8/. Could possibly be represented by one or more pallasites.
9/. Correlated with hypersthene chondrite and achondrite material on the basis of the iron content of the pyroxene.
10/. Eight pallasites analyzed for Ga and Ge fall in Ga-Ge group III (Lovering and others, 1957). Seven belong to the low fayalite group and one belongs to the high fayalite group of pallasites (see Mason 1963b, p. 10).
11/. Correlated with bronzite chondrite and achondrite material on basis of the iron contents of the olivine and pyroxene.
12/. None recognized. Structurally disrupted materials that may have been derived from an environment containing both iron-free pyroxene and metal may be preserved in the $MgSiO_3$ mesosiderites.
13/. Could possibly be represented by irons in Ga-Ge groups I and II, and by anomalous irons that lie between or outside these groups.
14/. The Ga and Ge contents of group I, II and III irons (Lovering and others, 1957) correlate with published bulk values of Ga and Ge in the enstatite, hypersthene and bronzite chondrites, respectively, if it is assumed that the metal phase of the chondrites has preferentially incorporated Ga and Ge from the chondrite silicate matrix during thermal metamorphism of the chondrite prior to and during fractionation of the metal. It is proposed that the lower boundary of group III be extended to slightly less than 1 ppm Ge to include a low Ge pallasite (Goldstein and Short, 1967, table 1), and a group of 10 "anomalous" irons reported by Wasson (1967a). This would leave, at most, a narrow compositional gap between Ga-Ge groups III and IV, which may be, in the broad sense, a single group.