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# Brazilian Meteorites

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# BRAZILIAN METEORITES

M. E. Zucolotto & L.L. Antonello.

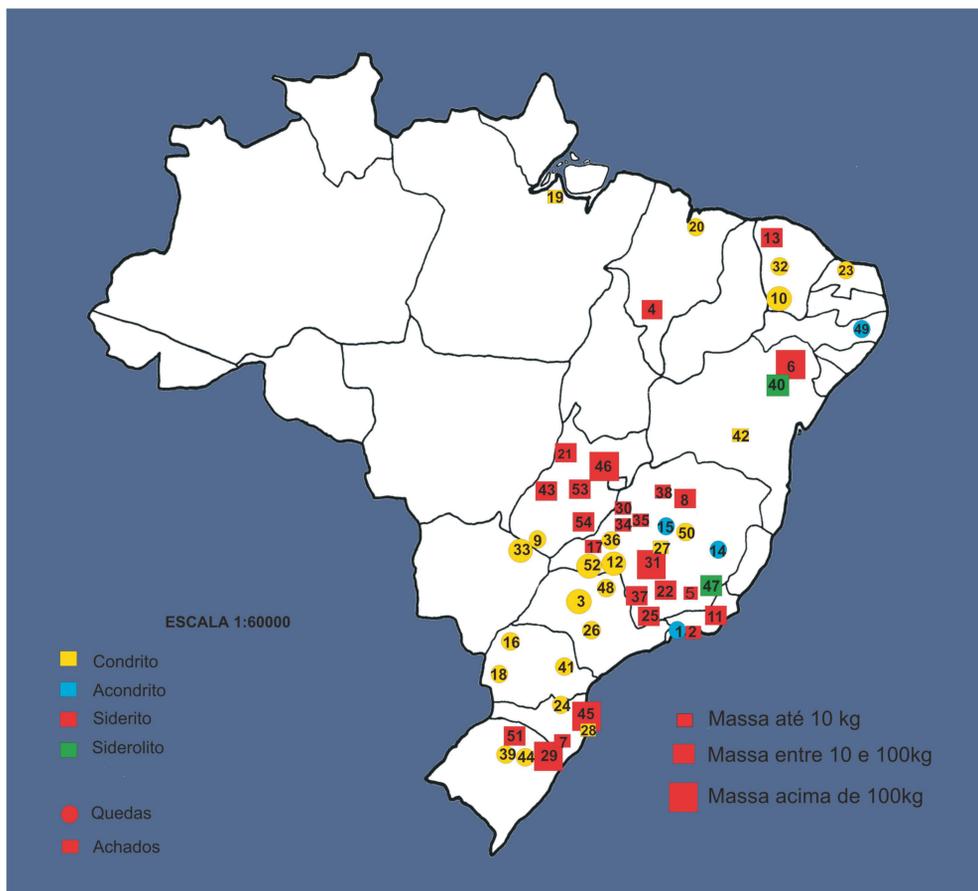
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## Brazilian Meteorites

N°	Name	UF	Date
1	Angra dos Reis	RJ	1869
2	Angra dos Reis II	RJ	(?)
3	Avanhandava	SP	1952
4	Balsas	MA	1974
5	Barbacena	MG	1918
6	Bendegó	BA	1784
7	Blumenau	SC	?
8	Bocaiuva	MG	1961
9	Cacilândia	GO	
10	Campos Sales	CE	1991
11	Casimiro de Abreu	RJ	1947
12	Conquista	MG	1965
13	Cratheüs	CE	1909
14	Gov. Valadares	MG	1958
15	Ibitira	MG	1957
16	Iguaraçu	PR	1977
17	Indianópolis	MG	1989
18	Ipiranga	PR	1972
19	Ipitinga	PA	1989
20	Itapicuru-Mirim	MA	1879
21	Itapuranga	GO	1977
22	Itutinga	MG	?
23	Macau	RN	1836
24	Mafra	SC	1941
25	Maria da Fé	MG	1982
26	Marília	SP	1971
27	Minas Gerais	MG	1888
28	Morro do Roccio	SC	<1928
29	Nova Petropolis	RS	1967
30	Paracutu	MG	
31	Pará de Minas	MG	1934
32	Parambú	CE	1964
33	Paranaíba	MT	1956
34	Patos de Minas I	MG	1925
35	Patos de Minas II	MG	?
36	Patrimônio	MG	1950
37	Piedade do Bagre	MG	1922
38	Pirapora	MG	1950
39	Putinga	RS	1937
40	Quijingue	BA	1980
41	Rio Negro	PR	1934
42	Rio do Pires	BA	?
43	Sanclerlândia	GO	1971
44	Santa Barbara	RS	1873
45	Santa Catarina	SC	1875
46	Santa Luzia	GO	1925
47	S. J. Nepomuceno	MG	?
48	S. José Rio Preto	SP	1962
49	Serra de Magé	PE	1923
50	Sete Lagoas	MG	1908
51	Soledade	RS	1982
52	Uberaba	MG	1903
53	Uruaçu	GO	1986
54	Veríssimo	GO	1965

Although only 54 meteorites have been recovered in Brazil, it is awarded with very rare and singular meteorites, as Angra dos Reis, RJ. (Angrite), Ibitira, MG. (Vesicular Eucrite), Governador Valadares, MG. (Nakhlite), Santa Catarina (Ni richest ataxite), São João Nepomuceno (IVA stony-iron) and Bocaiuva, MG (silicate rich iron) which performs more than 10% of the Brazilian meteorites.



In spite of many talks been performed in special to amateurs astronomers groups and Universities, the lack of the knowledge by the great population induces to its barely contribution with few new meteorites recovery. Therefore, a country with such continental dimension as Brazil, only has 54 registers, with the Minas Gerais State (MG) detecting about a third of them, due to native population interest in ore discovery.

The research project "Brazilian Meteorites" carrying out in Museu Nacional/UFRJ, Rio de Janeiro, involve: geologists, astronomers, students as well as amateur astronomers interested in such a matter in Brazil. Even without any financial support it has some progress with twelve new meteorites become to the knowledge of Science. There are still two new meteorites to be analyzed and many known mistakes pointed out by Buchwald [1] that are still unsolved waiting for informations and better descriptions with modern analytical data.

No one of Brazilian meteorites has the strewnfield determined, not even more recent shower as Campos Sales (1991). Most of Brazilian meteorites have only a sample recovered, indeed single falls being a very rare event.

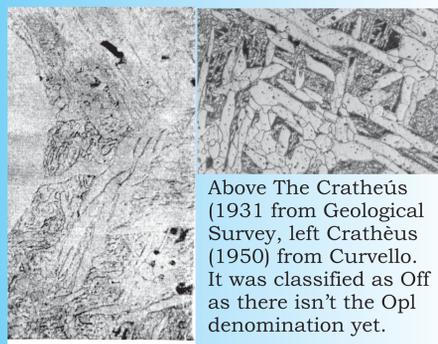
On visit to the localities former divulgated [2] someone realizes that the foreign dealers had been there before.

With the Paranaíba a dealer mislead the elderly meteorite owner substituting the authentic meteorite by a "hot rock". Even in Universities and small collections some meteorites had lost. (e.g. 20 kg of Conquista from UFMG and quite the whole Djalma Guimarães Collection). Some Universities had the meteorites in private possession of the retired curator for protection. Many places of known fall were visited trying to find more samples, but the only award is the correct historical data. These will be published soon in the book concerning Brazilian Meteorites by the authors.

### Paired or not?

Angra dos Reis ≠ Pirapora  
Barbacena ≠ Barbacena  
Cacilândia = Paranaíba  
Indianópolis ≠ Santa Luzia  
Crathëus (1931) = Pará de Minas

Compare	% Ni	Ga	Ge	Ir ppm
Pará de Minas	7.99	2.21	0.125	2.3
Crathëus(1931)	7.72	2.19	0.108	2.3 (Schaudy et al 1972)



Above The Cratheüs (1931 from Geological Survey, left Crathëus (1950) from Curvello. It was classified as Off as there isn't the Opl denomination yet.

### Paranaíba

Determination of the date and time of the fell with many pictures of the bolide of diverse localities.

Meteorite on sell by dealers

16.65 grams  
E-mail for availability & pricing  
This meteorite is discussed in Keil and Gomes' book, Brazilian Stone Meteorites. It is an impact melt breccia.

Elderly properties fool by someone with a hot rock

### Patos de Minas II

A new mass of about 50 kg was found near Patos de Minas. Its structure is identical of Patos de Minas (octahedrite). Unhappily our research program has no financial support even for a chemical analysis

#### References:

[1] Buchwald, F.V. (1975). Handbook of Iron Meteorites. [2] Gomes, C.B. & Keil, K. (1980). Brazilian Stone Meteorites. Univ. of New Mexico Press.

### Visists to fall/finds localities



Given coord: 19° 36" S; 48°34" W  
Correct coord: 21° 02" S; 46° 17" W

### Patrimônio

The Village of Morro Cavado (Patrimônio). The place where one fragment fell.

### Uruaçu



One of authors and Mr. Carvalho searching for new masses at Uruaçu.

New find on private possession, for sale.

Although some suspects of being masses of Campo del Cielo, new masses are being found there. Total 5 masses. The more recent one with 52 kg found last week and will be examined in the post congress field trip to Goiania.

### With retired curators

Bocaiuva  
S. José do Rio Preto  
Avanhandava?

### Without Informations

Angra dos Reis iron  
Cacilândia  
Paracutu  
Piedade do Bagre

### Private collectors

Dr Hardy Grunewaldt  
Mr. Wilton de Carvalho  
Dr. Carlos José Vieira

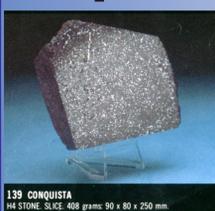
### Private Possessions

Balsas -  
Blumenau-  
Ibitira - sold  
Indianópolis -sold?  
Maria da Fé-  
½ Nova Petrópolis-  
Patos de Minas II ?  
Quijingue - sold  
Rio do Pires -  
Uruaçu - for sale  
Veríssimo -

### Disappeared from Universities and Public Institutions or private

Conquista(main mass) - with dealers  
Soledade(?) - with dealers  
Paranaíba(one mass) - with dealers  
Parambu(one mass) - disappeared  
Iguaraçu(one mass) - disappeared

### Conquista



The main mass of Conquista, about 20 kg. Some large specimens figure with dealers



the witness of Conquista fell at the place where only a mass was recovered