

DESCRIPTIVE MODEL OF SUPERIOR Fe

By William F. Cannon

DESCRIPTION Banded iron-rich sedimentary rock, generally of great lateral extent, typically layered on centimeter scale with siliceous (chert) beds interlayered with iron-rich beds.

GENERAL REFERENCE James (1954).

GEOLOGICAL ENVIRONMENT

Rock Types Commonly interlayered with quartzite, shale, dolomite.

Textures Iron-formations and host rocks commonly contain sedimentary textures typical of shallow-water deposition in tectonically stable regions.

Age Range Mostly Early Proterozoic (2.0±0.2 b.y.). Less commonly Middle and Late Proterozoic.

Depositional Environment Stable, shallow-water marine environment, commonly on stable continental shelf or intracratonic basin.

Tectonic Setting(s) Now commonly preserved in forelands of Proterozoic orogenic belts.

Associated Deposit Types Sedimentary manganese deposits may occur stratigraphically near or be interbedded with iron-formations.

DEPOSIT DESCRIPTION

Mineralogy Hematite, magnetite, siderite, fine-grained quartz.

Texture/Structure Nearly always banded at centimeter scale; very fine grained where not metamorphosed.

Alteration None related to ore deposition. Commonly metamorphosed to varying degrees or weathered and enriched by supergene processes.

Ore Controls No primary controls of local importance. Supergene ores may be localized by irregularities in present or paleo erosion surface.

Weathering Alteration of original iron mineral to Fe-hydroxides and hematite. Silica partly to totally leached. End product of weathering is high-grade supergene ore.

Geophysical Signature Magnetic anomalies.

EXAMPLES

Mesabi Range, USMN (James, 1983)

GRADE AND TONNAGE MODEL OF SUPERIOR Fe AND ALGOMA Fe DEPOSITS

By Dan L. Mosier and Donald A. Singer

COMMENTS Archean and Proterozoic deposits (Algoma and Superior types) are both included because they are not significantly different in tonnage or grades. See figs. 172-174

DEPOSITS

<u>Name</u>	<u>Country</u>	<u>Name</u>	<u>Country</u>
Altamira-Frontera	VNZN	Bellary	INDA
Amapa	BRZL	Bicholim	INDA
An-shan	CINA	Burnt Hill-Knob Lake	CNQU
Bahia	BRZL	Cerro Bolivar	VNZN
Bailadila	INDA	Chityal and others	INDA

Cuyuna	USMN	Moose Mountain	CNON
Dhali-Rajhara	INDA	Mount Gibson	AUWA
El Pao	VNZN	Mount Gould	AUWA
Fiskefjord	NRWY	Mount Hale	AUWA
Fort Apache	USAZ	Mount Philip	AUQL
Fort Gourand	MAUR	Musan	NKOR
Gogebic	USMN	Mutum	BLVA
Gorumahisani and others	INDA	Noamundi-Joda-Gua etc.	INDA
Goulais	CNON	Norberg	SWDN
Guntur	INDA	Pa-pan-ling	CINA
Isua	GRLD	Pen-chi-hu	CINA
Iron Monarch-Iron Knob	AUSA	Piacoa	VNZN
Jussaari	FNLD	Porkonen	FNLD
Kanjamalai and others	INDA	Rowghat	INDA
Kemmangundi and others	INDA	Sangalwara	INDA
Koolyanobbing	AUWA	Santa Barbara	VNZN
Krivoi-Rog	URRS	Serria do Carajas	BRZL
Kudremukh and others	INDA	Sirigao	INDA
Kung-changling	CINA	Ssu-chia-ying	CINA
Kusalpur	INDA	Stripa-Striberg	SWDN
Labrador Quebec	CNQU	Sydvanager	NRWY
Lohara and others	INDA	Tallering Peak	AUWA
Los Castillos	VNZN	Thabazimbi	SAFR
Maria Luisa	VNZN	Tonkolili	SRLN
Marquette	USMN	Vermilion	USMN
Mato Grosso	BRZL	Vestpolltind	NRWY
Menominee	USMN	Weld Range-Wilgie Mia	AUWA
Mesabi	USMN		
Minas Gerais	BRZL		

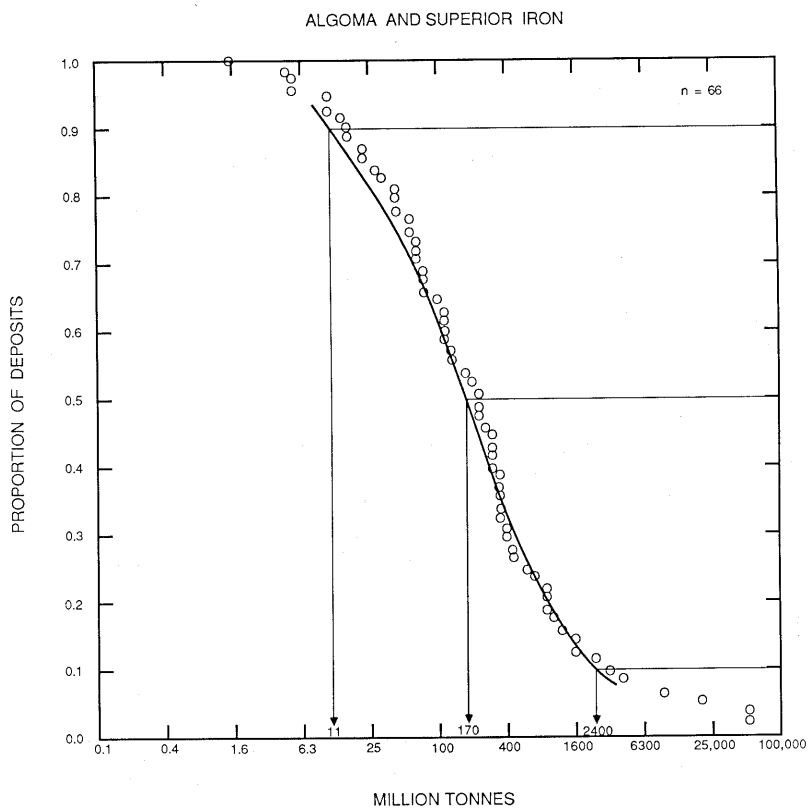


Figure 172. Tonnages of Algoma Fe and Superior Fe deposits.

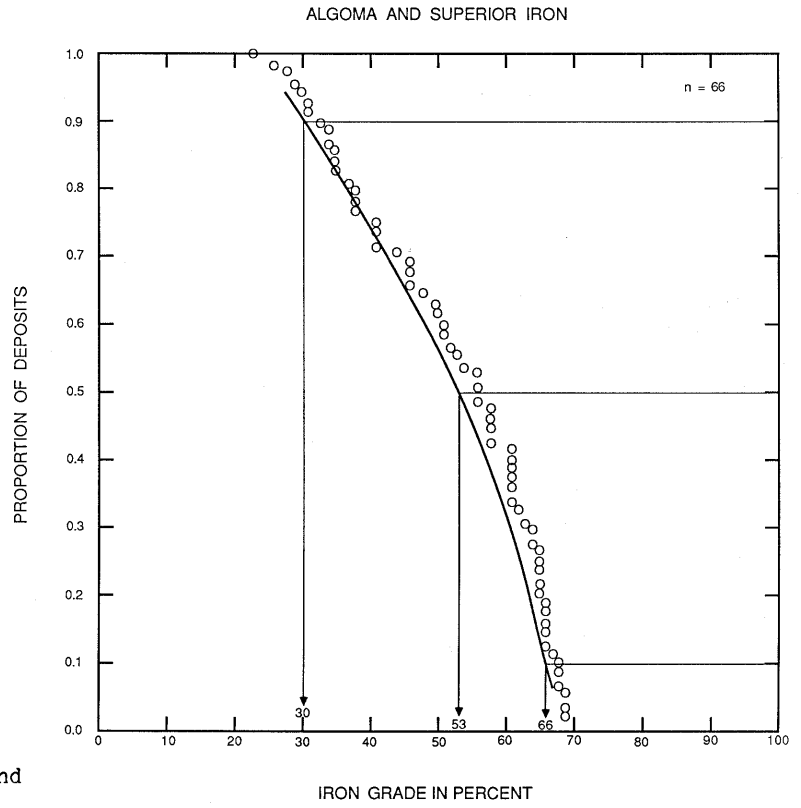


Figure 173. Iron grades of Algoma Fe and Superior Fe deposits.

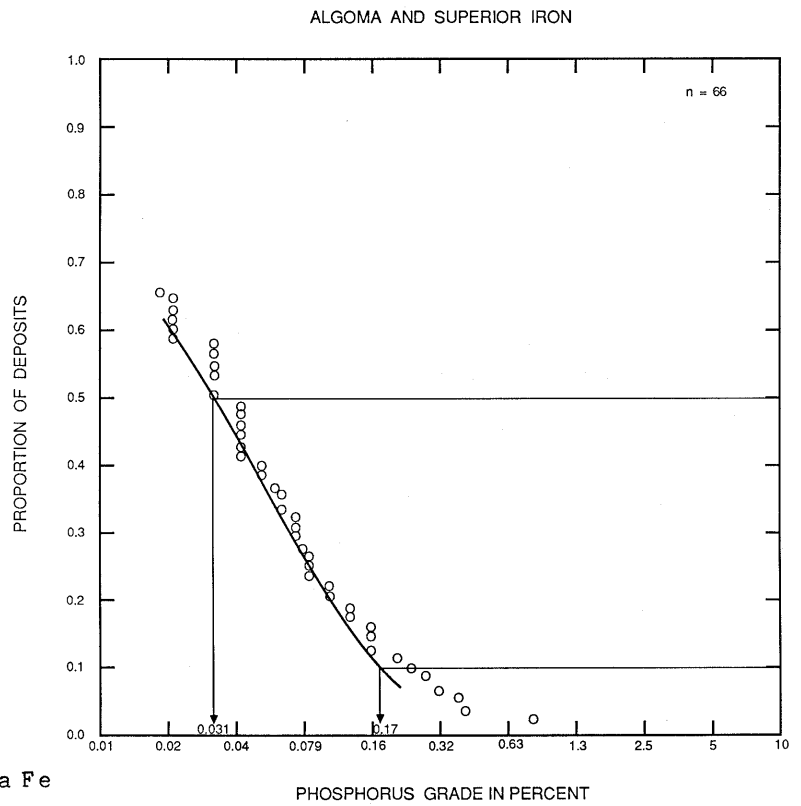


Figure 174. Phosphorus grades of Algoma Fe and Superior Fe deposits.