

Meteorite Name: **Mundrabilla**
 Country: Australia
 State/District: Western Australia, Nullarbor Plain
 Co-ordinates: 30°47'S, 127°33'E
 Date of find : 1911

Total known weight: 24,000kg (approx.)
 Number of pieces: unknown

Classification:

Type: Iron **IIICD-AN**
 Octahedrite, medium (0.6mm)
 Remarks: sulphide-rich iron

Mineral Olivine Fa 3
 Analyses: Pyroxene Fs 6

plagioclase: An13 Alb83 Or4

Pairings: *not known*

Synonyms: *Loongana Station (iron)*
Loongana Station West
Premier Downs

Description and references:

Two masses, 10-12 tons and 5.5 tons, were found in March 1966, lying within only very slight depressions in clayey soil, Met. Bull., 1967, (39), Meteoritics, 1970, 5, p.90. Three smaller masses of Premier Downs, assigned to this shower, were found in 1911 and 1918; the larger mass of Mundrabilla is in Perth (Western Aust. Mus.), the smaller mass went to Adelaide, then to Heidelberg for cutting and distribution, A.L.Graham et al., Cat. Met., p.249. Analysis, 7.79% Ni, 60 ppm Ga, 171 ppm Ge, J.R.de Laeter, Meteoritics, 1972, 7, p.285. Description, P.Ramdohr and A.El Goresy, Chem. Erde, 1971, 30, p.269. Al-26 activity, H.Kammer, Meteoritics, 1973, 8, p.393 (abs.). Noble gas data, T.Kirsten, Meteoritics, 1973, 8, p.400 (abs.). Cd and Zn abundances, K.J.R.Rosman and J.R.De Laeter, GCA, 1974, 38, p.1665. Further analysis, chemically anomalous, 7.72% Ni, 59.5 ppm Ga, 196 ppm Ge, 0.87 ppm Ir, J.T.Wasson, Meteorites, Springer-Verlag, 1974, p.307. Mineralogy of silicate inclusions, P.Ramdohr et al., Meteoritics, 1975, 10, p.477 (abs.). Full description, V.F.Buchwald, Handbook of Iron Meteorites, Univ. of California, 1975, p.858. Mineralogy, P.Ramdohr, Fortschr. Min., 1976, 53, p.165. Distribution of Mn-53 in meter-sized slabs, W.Hampel and O.Müller, Meteoritics, 1977, 12, p.249 (abs.). Analysis of silicates in troilite nodules, olivine Fa₃, K.L.Robinson and R.W.Bild, Meteoritics, 1977, 12, p.354 (abs.). Major and trace element analysis of metal and troilite,

H.H.Weinke, *Meteoritics*, 1977, 12, p.384 (abs.). I-Xe dating of troilite, S.Niemeyer, *GCA*, 1979, 43, p.843. Ar-Ar age of silicate inclusions, 4.57 ± 0.03 Ga, S.Niemeyer, *GCA*, 1979, 43, p.1829. Oxygen isotopic composition, T.K.Mayeda et al., *LPSC*, 1980, 11, p.694 (abs.). Two further masses, of about 840kg and 800kg, were found in 1979, 1.3 km apart and 20 km E of the site where the other two large masses were found, J.R.De Laeter and W.H.Cleverly, *Meteoritics*, 1983, 18, p.29. Pb isotopic composition, C.Göpel et al., *Meteoritics*, 1983, 18, p.303 (abs.). U-Pb systematics, C.Göpel et al., *GCA*, 1985, 49, p.1681. Sphalerite composition, S.A.Kissin et al., *GCA*, 1986, 50, p.371. Si isotopic composition of silicate, C.Molini-Velsko et al., *GCA*, 1986, 50, p.2719. Ag, Pd isotopic composition, J.H.Cheng and G.J.Wasserburg, *GCA*, 1990, 54, p.1729. Determination of concentration profiles of Fe, Co, Ni, Cu, Ga, and Ge by PIXE, S.Bajt, *Meteoritics*, 1991, 26, p.314 (abs.). Be-10 and Mn-53 data, K.Nishiizumi et al., *Meteoritics*, 1991, 26, p.379 (abs.). Sulfur isotopic composition of troilite, X.Gao and M.H.Thiemens, *GCA*, 1991, 55, p.2671. Bidirectional reflectance spectrum of troilite, D.T.Britt et al., *LPSC*, 1992, 23, p.167 (abs.). Mn-Cr systematics for alabandite, I.D.Hutcheon et al., *LPSC*, 1992, 23, p.565 (abs.). New analysis, discussion of classification, M.Hoashi et al., *Chem. Geol.*, 1992, 98, p.1. Two further masses of about 2000kg and 550kg were found, R.Haag, priv. comm. to J.Koblitz, 1994. Further analysis and classification, an anomalous member of group IIICD, B.G.Choi et al., *GCA*, 1995, 59, p.593.

Repositories of specimens:

12000kg: Perth, West. Austr. Mus.
 2000kg: Tokyo, privately held [single mass, approx. weight]
 942kg: Heidelberg, Max-Planck-Inst.
 550kg: Tucson, R.Haag Colln. [single mass]
 327kg: London, Nat. Hist. Mus.
 263kg: Moscow, Acad. Sci.
 217kg: Washington, U.S. Nat. Mus.
 130kg: Geneva, Mus. d'Hist. Nat.
 21.85kg: Zürich, ETH
 18.4kg: Zürich, J.Nauber Colln.
 18kg: Kankakee, Illinois, J.Schwade Colln.
 14.97kg: Vienna, Naturhist. Mus.
 9kg: Bonn, Min. Mus. Univ.
 6.5kg: Paris, Mus. d'Hist. Nat.
 5.6kg: Albuquerque, Univ. of New Mexico
 5kg: Frankfurt am Main, Naturmus. Senckenberg [approx. weight]
 4.94kg: Chicago, Field Mus. Nat. Hist.
 4.15kg: Marburg, Min. Mus. Univ.
 4.03kg: Rome, Vatican Observatory Colln.
 3.53kg: Prague, Nat. Mus.
 3.52kg: Copenhagen, Univ. Geol. Mus.
 3.3kg: Los Angeles, Univ. of Calif.
 3.09kg: Berlin, Mus. Naturk., Humboldt Univ.
 2.9kg: Tempe, Arizona State Univ.
 2.27kg: Tokyo, NIPR

2.23kg: Darmstadt, Landesmus.
2.14kg: Hamburg, Mus. Min.-Petrogr. Inst.
1.80kg: Hanau, Zeitschel Colln.
1.64kg: Sydney, Austr. Mus.
1.61kg: Gifhorn, Bartoschewitz Colln.
1.54kg: Houston, E.A.King Colln.
1.53kg: Malta, Montana, M.Cilz Colln.
1.13kg: Watchung, N.J., DuPont Colln.
1.1kg: Schönenwerd, Bally-Prior Mus.
1082g: Gloggnitz, Franger Colln.
770g: Münster, Univ.
735g: Paris, A.Carion Colln.
676g: Villiers, Guibert Colln.
667g: New York, Amer. Mus. Nat. Hist.
634g: Melbourne, Nat. Mus. Victoria
572g: Tübingen, Min.-Petrogr. Inst.
498g: Bern, Naturhist. Mus.
471g: Würzburg, Min. Mus.
433g: Oeschgen, Beat Booz Colln.
400g: Wiesbaden, Mus.
259g: Köln, Univ.
221g: Augsburg, Heinlein Colln.
177g: Grenchen, T.Stuedi Colln.
151g: Canberra, Austr. Nat. Univ.
136g: Stade, A.Seidel Colln.
108g: Perth, Govt. Chem. Lab. ['Loongana Station (iron)']
103g: Perth, West. Austr. Mus. ['Premier Downs']
94g: St. Petersburg, Mining Mus.
90g: Buenos Aires, Asoc. H. Pampa
80g: Coburg, Natur-Mus.
64g: Machecoul, Guibert Colln.
45g: Freiburg, J.Otto Colln.
43g: Violau, Volkssternwarte
34g: Freiburg, Min.-Petrogr. Inst.
23g: Colorado Springs, Tiara Observatory
specimen: Adelaide, South Austr. Mus.

Repositories of prepared sections:

Heidelberg, Max-Planck-Inst. (IPS)
Washington, U.S. Nat. Mus. (PS,PTS)