



**U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY**

**Comparative Geology and Geochemistry  
of Sedimentary- Rock-Hosted (Carlin-Type) Gold  
Deposits in the People's Republic of China and in  
Nevada, USA**

**Open-File Report 98-466**

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*by*

**Zhiping Li<sup>1</sup> and Stephen G. Peters<sup>2</sup>**

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# 中华人民共和国与美利坚合众国 沉积岩(卡林)型金矿床的地质、地球化学对比研究

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## 内容提要

自从六十年代起,沉积岩(卡林)型金矿床已被认为是一种地质成因独特,经济意义巨大的矿床类型。除美国西部大盆地之外,类似的金矿床已经发现在中国,澳大利亚,多米尼加,西班牙,俄罗斯,马来西亚,菲律宾,南斯拉夫和希腊等国家。在中国的中部和西南地区发现大约有112个沉积岩型金矿床(点),其中至少有19个金矿床具有潜在的工业储量。这使得中国成为继美国之后第二个在勘探和开发此类型金矿比较领先的国家。

中国沉积岩型金矿床主要分布在前寒武纪扬子准地台的边缘,并受区域深大断裂的控制。次一级区域构造比如短轴背斜,高角度断层,层控角砾岩体和地层不整合面做为有利的容矿构造。这些金矿床产于古生代到中生代不纯的石灰岩,砂岩和泥岩之中。围岩蚀变类型包括硅化,去碳酸岩化,泥化,碳化和局部钠长石化。除少量煌斑岩和长英岩脉外,大多数中国沉积岩金矿床中没有火成岩出露。

金以浸染状产于这些金矿中。主要的金属矿物有自然金,银金矿,黄铁矿,毒砂,辉锑矿,雌黄,雄黄和辰砂。脉石矿物包括石英,重晶石,有机碳,碳酸盐矿物和粘土矿物。钠长石出现在少数矿床中。

类似于美国内华达金矿床,Au,As,Sb和Hg为这类金矿床的典型元素组合;一些中国沉积岩型金矿床与U矿床伴生,铂族元素在一些矿床中富集到工业利用水平。中国和美国沉积岩金矿床中的包体都具有低盐度的特点(3~9 wt%),同位素数据说明成矿热液具有多种来源,成矿温度变化在165°~290°之间,压力变化在52~560巴,说明这些金矿床是在低温热液的环境下形成的。

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