DISCOVERY OF A NEW METEORITE CONCENTRATION SITE IN QUEEN MAUD LAND, ANTARCTICA. G. Delisle1, C. Koeberl2, F. Brandstaetter3 and Queenmet Scientific Party. Bundesanstalt fuer Geowissenschaften und Rohstoffe (BGR), Hannover, Germany. E-mail: G.Delisle@bgr.de.  2University of Vienna, Austria.  3Natural History Museum, Vienna, Austria.

Introduction: Numerous meteorite concentrations at elevation levels between 2000 to 2500 m are known, e.g., from ice fields in the Transantarctic Mountains or Enderby Land. There should be meteorite concentrations in the territory in between - Queen Maud Land - because the regional glaciological situation appears to be roughly comparable. An isolated find in 1961 by Russian researchers - the Lazarev meteorite – offers a first indication for the potential of the area [1]. To check this question further, a reconnaissance survey of the area southeast of the Wohlthat Massiv in Queen Maud Land/Antarctica was carried out in the Antarctic field season 2007/08 by the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), Germany.

Results: A meteorite concentration site, now unofficially called Queenmet site, was detected on blue ice fields to the southeast of the Payer Mountains. The Queenmet site was selected on the basis of an extended regional airborne radar survey in 1995/1996 which had indicated regionally thin ice cover [2]. The site itself can be described in general terms to be dominated by a gentle topographic step running between two unnamed nunataks. The southern nunatak is located at 72° 23.5’S, 16°E, the northern one at 72° 13’S, 16° 8’E. 16 meteorites have been found, all with one exception being L, LL or H ordinary chondrites. In addition, one 31 kg iron meteorite was recovered.

Upon return from the search site the finding location of the Lazarev meteorite was searched from the airplane. This particular meteorite has the oldest terrestrial age (5 Ma) of all Antarctic meteorites [3]. The site is located on a narrow ridge which makes it unlikely that this find represents a direct fall. The ridge, serving as a local barrier to ice flow, rises only a few m above the current ice stand. The site shows many features that are typical for meteorite accumulation areas, such as the presence of blue ice in front of the ridge.

Discussion: We propose that the ice level of roughly 5 Ma ago was apparently similar to the present-day condition, indicating an extremely well-developed long term stability of the East Antarctic ice sheet under different climatic conditions. A significantly increased ice stand apparently never existed in the region since that time. Otherwise the meteorite would have been glacially removed from the outcrop. This observation is in good agreement with recent numerical modelling of the East Antarctic ice sheet under different climatic regimes [4]. This observation, together with our meteorite discoveries, leads us to the assumption that this underexplored region offers opportunities for the discovery of additional concentration sites.