THE HABHAB STRUCTURE OF CENTRAL OMAN: NOT AN IMPACT CRATER. B. A. Hofmann[1], E. Gnos, A. Al-Kathiri[2,3], S.A. Al-Busaidi[4], A. Al-Rajhi[4], M. Al-Batashi[4], J. Terken[5] [1]Naturhistorisches Museum der Burgergemeinde Bern, Bernastrasse 15, CH-3005 Bern, Switzerland, [2]Institut für Geologie, Universität Bern, Baltzerstrasse 1, CH-3012 Bern, Switzerland, [3]Directorate General of Commerce and Industry, Ministry of Commerce and Industry, Salalah, Sultanate of Oman, [4]Directorate General of Minerals, Ministry of Commerce and Industry, Muscat, Sultanate of Oman, [5]Nederlandse Aardolie Maatschappij (NAM), Assen, The Netherlands.

Introduction: The 6 km near-circular Habhab structure located in Central Oman (19° 55'N, 57° 0'E, 75 km E of Hayma) has been suggested to represent a possible impact structure based on satellite imagery [1-4], an interpretation recently challenged [5]. The structure is located on a vast near-flat desert plain made up of shallow marine Fars group limestones of middle Miocene age. It consists of two concentric, near-circular shallow depressions. We investigated the structure on the ground in January 2002, December 2002 and January 2003. The discovery of several ordinary chondrites in and near the structure motivated us to reinvestigate it's origin. Based on the field observations and seismic profiles we conclude that the Habhab circular structure is not an impact crater. This conclusion is based on the following observations:

- Undisturbed, bedded Miocene limestone was observed at the rim of the structure as well as in its center. No shock effects (brecciation, intense fracturing) were observed in the beds or in the abundant fossils contained therein.
- The topographic relief between the different features observed in satellite imagery is only a few meters, too little for a crater of young age. The flanks of the structure are not uplifted.
- Absence of any ejecta from stratigraphically deeper strata.
- Seismic profiles indicate the presence of a salt plug exactly below the Habhab circular structure.

We consider that the Habhab circular structure most likely is caused by salt dissolution/salt tectonics related to a near-surface salt plug.

References: [1] Sharpton et al. (1988) *Meteoritics, 23,* 301. [2] McHone, J.F. and Dietz, R.S. (1988) *Meteoritics 23,* 288-289. [3] Dietz, R.S. et al. (1975) *Meteoritics 10,* 393, 509. [4] McHone J.F. and Greeley, R. (1997) *LPSC XXVIII,* 915-916. [5] Levell B. et al. (2002) *GeoArabia 7,* 721-730.