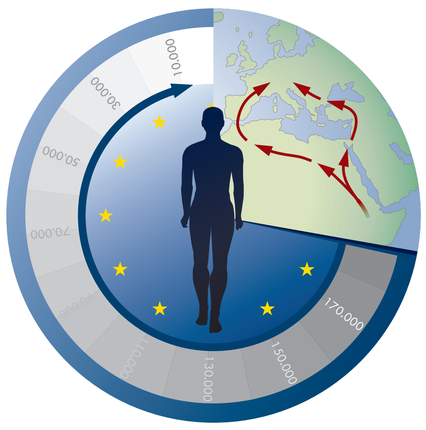

Tracing Stone with Metal
Estimating raw material provenance areas in the Banat (SW-Romania) for the early Upper Palaeolithic timeframe

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ABSTRACT

With the discovery of the **modern human fossils of the Oase Cave** (Caraş-Severin District) in Southwest Romania, scholars started to realize the significance of the **Carpathian-Pannonian region** in the **evolution of mankind and the peopling of Eurasia** during the **Late Pleistocene**. Sadly, these fossils are **deprived of a reliable archaeological context**, as is the case with many other Upper Palaeolithic cave sites in this area, such as Cioclovina and Muierii Cave.

Fortunately, the **archaeological archives of the open-air sites of Cosava, Tincova and Romanesti-Dumbravita** can contribute in this regard, as the main concentration of the latter was recently **dated to 40 ka BP by means of OSL and TL**. With the evaluation of these records, it is intended to enlarge current knowledge of **early Upper Palaeolithic** modern human behaviour during the initial peopling of Europe. Since the assemblages of the open-air sites **lack organic remains**, focus is on the assessment of the **lithic raw material economy**, for which data on the **lithic technology**, **cortex** and **raw materials** are essential.

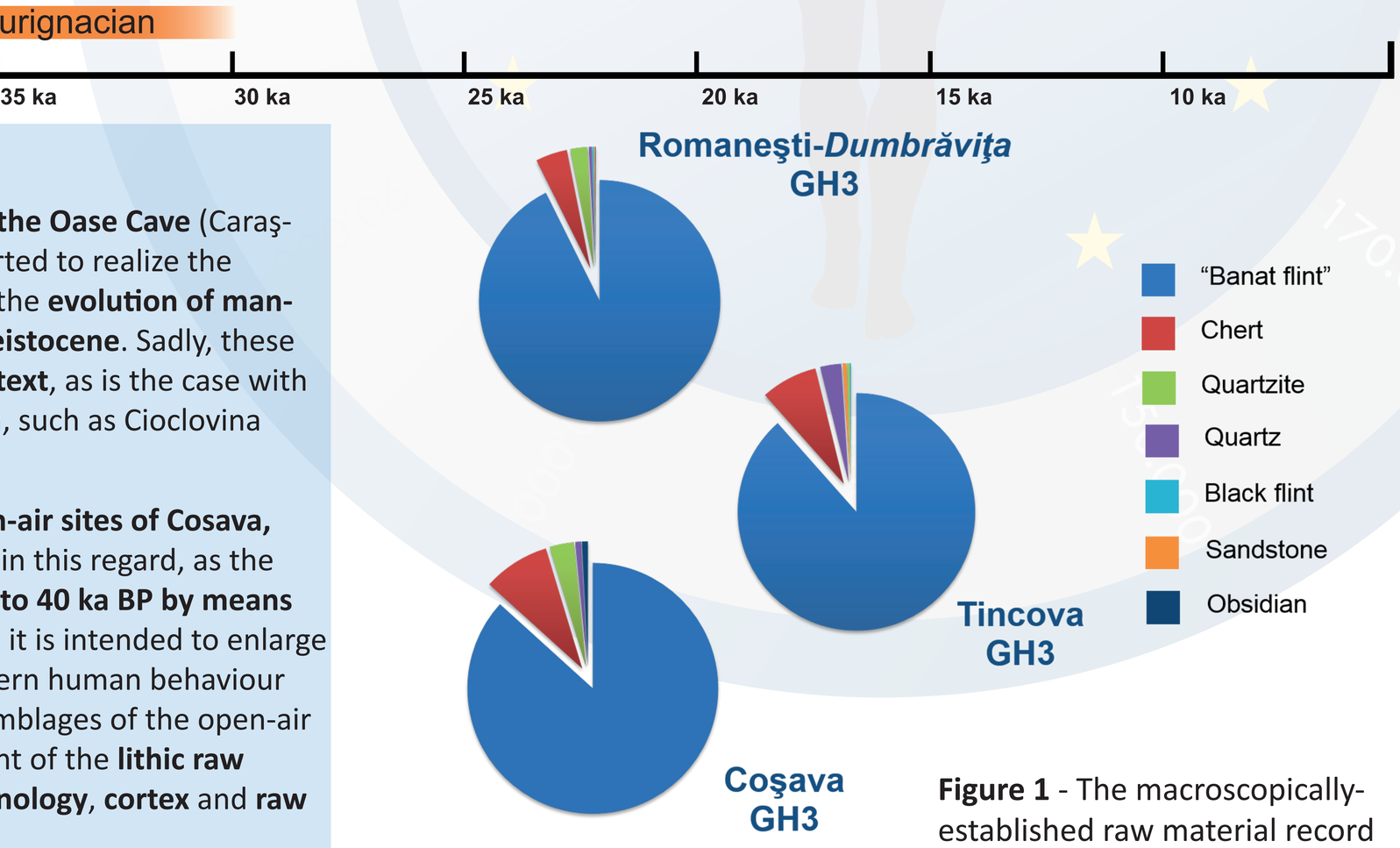

Figure 1 - The macroscopically-established raw material record

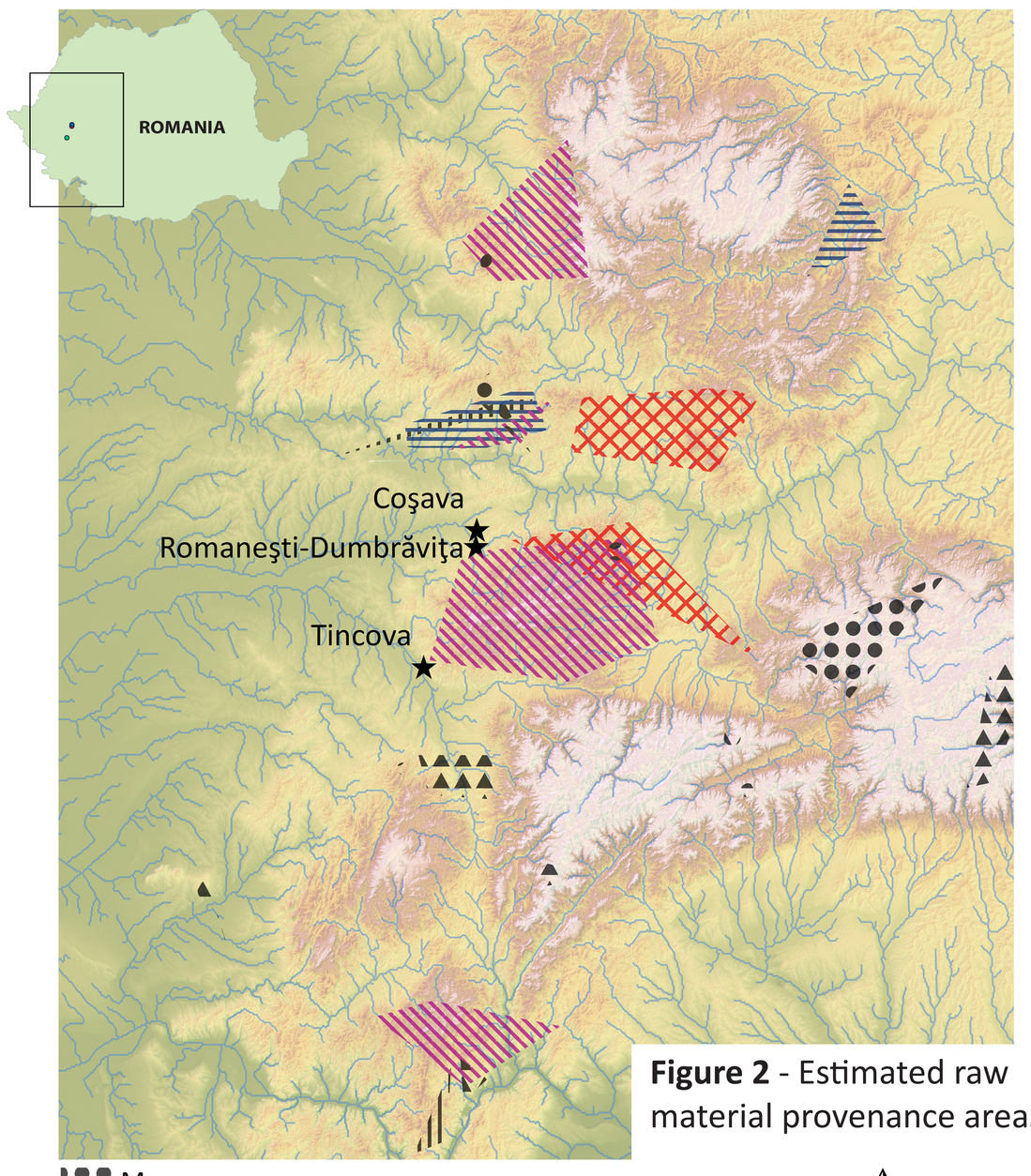

Figure 2 - Estimated raw material provenance areas

PROBLEM AND METHODOLOGY

The **raw material record** of the early Upper Palaeolithic open-air sites is **dominated** by a heterogeneous rock called **„Banat flint"**. Since it includes artefacts with **variable** lustres, fabrics, translucencies and colours, it could be that similarly-looking rocks were **erroneously given this label**, **possibly masking exotic varieties**. In lesser quantities, other rocks occur. However, also their identity is **not straightforward** (see figure 1).

As these uncertainties **impede** any **reliable estimation** of the former lithic raw material economy, a sample was geochemically evaluated by means of **X-ray florescence spectroscopy.** They chemical signals were **connected to the landscape by means of metal ore deposits**, which delineate provenance areas. Although raw materials alone do not explain past **human behaviour**, pinpointing the **provenance areas** enables a first impression of the **distance** that prehistoric people could have bridged to **collect** the **rocks** needed to produce lithic artefacts.

PRELIMINARY RESULTS

In total, **six distinct signals** were identified that could all be connected to **metal ore mineralizations** in the surrounding the sites. The distribution of metal ores with similar chemical composition as the artefacts **delineate the provenance area**, in which **primary sources** should be located (see figure 2).

The fresh or rolled nodule **cortex** suggests the samples with a **lead and zinc,** an **aluminium** and a **chrome signal** were procured **at or close to a primary source**, whereas samples with an **iron, titanium and vanadium** signal had a **pebble cortex** suggesting that they were picked up at a **secondary outcrop**.

Artefacts with a **manganese** signal **lack cortex** relicts and more important, are either **blanks and modified knapping products.** Although metal ores in the area suggest the occurrence of primary outcrops, this rock is considered **distant** as a result of its odd technological representation in the lithic records.

ACKNOWLEDGEMENT

Prof. Dr. Jürgen Richter, Dr. Wei Chu and Dr. Thomas Hauck (SFB 806 Our Way to Europe);
Dr. Mircea Anghelinu and Dr. Loredana Niţa (Universitatea Valahia Târgovişte, Târgovişte);
Dr. Rolf Hollerbach, Dr. Stephan Opitz and Florian Steininger (Universität zu Köln, Cologne);
Dr. Otis Crandell (Universitatea Babeş-Bolyai, Cluj-Napoca);

DFG Deutsche Forschungsgemeinschaft

This project is affiliated with the CRC 806 „Our way to Europe". We thank the German Science Foundation (DFG) for funding this project.