UNEXPECTED DISCOVERIES IN THE COCONINO SANDSTONE (PERMIAN, ARIZONA)

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ABSTRACT

The Coconino Sandstone, a well-known sedimentary deposit in the Grand Canyon, has recently been the subject of a number of new discoveries that have challenged traditional interpretations.

**Unconformities**

New evidence for unconformities in the Coconino has been reported, suggesting a more complex depositional history than previously thought.

**Dolomite**

Dolomite has been identified in several locations, indicating a possible source of carbonates in the area.

**Moderate Sorting**

The Coconino exhibits moderate sorting characteristics, indicating a relatively stable depositional environment.

**Sub-Angular Quartz**

Sub-angular quartz grains have been found, suggesting the presence of a fluvial source of sediment.

**Angular K- Feldspar**

Angular K-feldspar grains indicate a possible volcanic source for sediment.

**Mica**

Mica is present in the Coconino, suggesting the presence of metamorphic rocks in the area.

**Parabolic Recumbent Folds**

Parabolic recumbent folds (PRFs) are penecontemporaneous soft-sediment deformation features that are common in the Coconino.

**Primary Current Lineation**

Primary current lineation is a deformation feature that is formed by the movement of fluid through the sediment.

**Rainprints, Ripplets, and Slumps**

Rainprints, ripplets, and slumps are common in the Coconino, indicating periods of wet and dry conditions.

**Cross-Bed Dips and Porosity**

Cross-bedded deposits in the Coconino show variations in porosity, indicating changes in depositional environments.

**Planar Contacts Between Laminates**

Planar contacts between laminates suggest that sediment was deposited in a variety of environments.

**Transitional Contact**

Transitional contacts between different depositional units suggest a dynamic depositional history.

**Study and Sample Areas**

The study areas are marked on the map, including the locations of outcrops and sample sites.

**Figures and Tables**

The figures and tables provide a detailed view of the various features and characteristics of the Coconino Sandstone.