APOLLO-SOYUZ PHOTOGRAPHS OF ARID LANDS

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Apollo-Soyuz Test Project (ASTP) photographs of arid lands provide valuable information on regional color variations of desert surfaces and on large-scale desert landforms, particularly sand dunes.

For example, ASTP photographs of longitudinal dunes in the Strzelecki Desert of Australia reveal an increase in red color as the distance from the source of sand increases. Reddened sands, due to the presence of iron-oxide coatings on individual grains, have been observed in deserts throughout the world, and the degree of reddening in sands of uniform aridity and source may be used to determine the relative ages of the sands.

ASTP photographs of the Western Desert of Egypt just west of the Nile Delta show three distinct color zones roughly parallel to the Mediterranean coast. These zones have been correlated in the field with: (1) arable soil composed of quartz, clay, and calcium carbonate particles; (2) relatively active sand with a few scattered desert shrubs; and (3) desert pavement.

In Argentina, ASTP photographs of the Monte Desert revealed two unusual and little-known dune fields. The largest of these fields displays a fishscale pattern of numerous, irregular crescentic dunes and linear sand ridges. These patterns are controlled by a number of factors including the wind regime, the underlying and surrounding topography, changes in climate, and the amount of sediment available.

Furthermore, photographs of semi-arid southeastern Angola showed landforms indicative of climatic change, such as suggested karst features, which imply more humid conditions, and ancient sand dunes, which imply greater aridity.