

# Exploring the Mineralogy at Lonar Crater with Hyperspectral Remote Sensing

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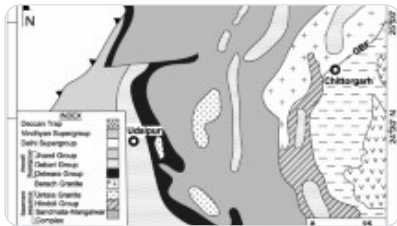
## Abstract

The earth crust is made up of variety of minerals. These minerals are having very significant applications in our day today life. The various studies, characterizing physical, chemical, electrical, structural properties, have been carried out on the Lonar crater for studying mineralogy, surface morphology and geology but has not been done by remote sensing technology. So, the proposed work focused on exploring the mineralogy at the Lonar crater by using high resolution hyperspectral imageries. The spectral reflectance of minerals was characterized by using FieldSpec4 spectroradiometer. The minerals at Lonar crater were

explored by performing preprocessing and spectral analysis. The techniques used in the work are Spectral Angle Mapper and Spectral Feature Fitting. The results of the work marked the presence of pigeonite and augite at Lonar crater which indicates that this crater is the result of extrusive volcanic activity. Also, the presence of augite underneath basaltic igneous rocks as the rock type of Lonar crater. The salinity of the Lonar lake is proved by the presence of mirabilite and salt. Thus, the important results of this work are presence of minerals quartz, actinol, jarosite, pigeonite, augite, albite, mirabilite and scolecite. The significance of these minerals related to the crater is discussed here. It also validated the existence of these minerals which were identified through the previous geological, chemical, physical, electrical and magnetic studies and the minerals pyrite, chlorite, richter, illite, limonite, allanite, amphibolite and margarite were also identified.

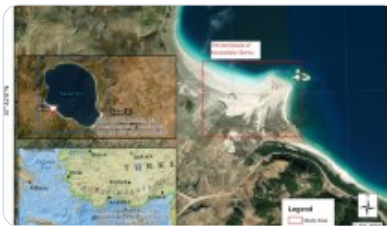
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