

MARS SOUTH POLE CO₂ PALEOATMOSPHERE.

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Noachian structures of impact origin located near the South Pole, are interpreted to have had a profound influence on the evolution of south polar dry ice deposits.

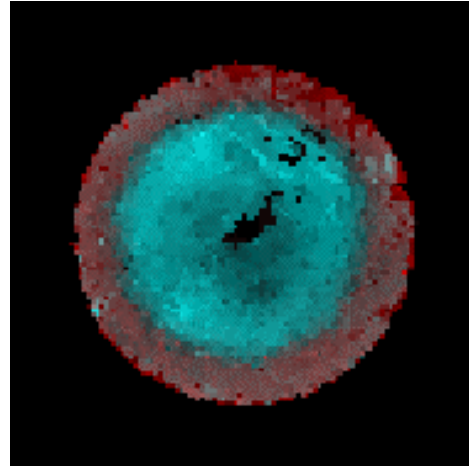
The measurements show minimum temperatures and chemical alteration in OH species in spectra of the dust near the winter South Pole more in accord with radiative equilibrium.

In november and South Pole residual cap, Orographic Clouds are found around The Tharsis-induced though which may have sustained the CO₂ release for the Noachian pressurized atmosphere.

Parts of the CO₂ spectrum indicate that the lower atmospheric region of Mars is at a warmer temperature than the underlying surface.

The concentration of PAH's, which represent a major carrier of Deuterium excesses, found in noachian martian meteorite is a thousand times higher than the highest concentrations found in the snows of the greenland icesheet. Fresh and old snow have difference(0.75-0.95) in albedo, on earth for an albedo jump of 0.1, glacial area is only fully covered 30% of the year with present CO₂ concentrations. Large changes in the relative reflectivity of several areas of Mars has been observed over 20 years..

The albedo of the residual polar ice cap(unit Ac) is higher than all other units.. The highest reflectivity gradients occur along the boundary of the seasonal CO₂ ice cap. The South Pole region made of cryptic CO₂ has sublimed away much quicker than other areas(figure) of the seasonal polar cap.



cryptic dark and cyan visual albedo

Seasonal asymmetry in the CO mixing ratio is explained by the intense condensation of CO₂ in the south polar cap at Ls=112°, a high level of deuteration can be obtained if the gas phase is depleted of CO. Spectra taken at the Nasa Infrared Telescope Facility (IRTF) at 4.67 microns show emission (2-1 vibrational band) and atmospheric absorptions of isotopic forms of CO and water. UV limbs measurements have found intense Cameron band emissions of CO from 1900-2700 Å, which are primarily produced by dissociative excitation of CO₂ by ionospheric photoelectrons and by photons. CO₂⁺ emissions at 2890 Å and from 3000-4000 Å are produced by the photoionization of CO₂.

The strong orbital variation(40%) in solar flux incident on Mars leads to distinct aphelion paleoclimate and perihelion climate..