Polar Exploration and Resource Extraction

M. B. Duke
Hydrogen at the Poles

Hydrogen, in any form, is an important resource on the Moon
– Propellant, life support, energy storage, chemistry

Hydrogen is believed to be concentrated in polar cold traps

Exploration for hydrogen has commonalities with and risks for lunar science
– Commonalities: Search for location, concentration, sources
– Risks: Contamination of fragile environment, disruption of information of value to science
Exploration Considerations

Hydrogen form, sources, and distribution – highest order objective for science and resources
- Includes isotopic studies to characterize sources
- Understand polar volatile transfer processes - guide to preserving environment, exploring for resources
- Before intensive exploitation begins

More detailed scientific study of any hydrogen stratigraphy (including detailed isotopic studies) must not be precluded by resource extraction processes
- Polar hydrogen preserve?