

(NASA-TM-87392) THE 1984 NASA/ASEE SUMMER  
FACULTY FELLOWSHIP PROGRAM Final Report  
(NASA) 57 p HC A04/MF A01 CSCL 05I

N85-13662

G3/80 Unclas  
24533

NASA/ASEE SUMMER FACULTY FELLOWSHIP  
PROGRAM

UNIVERSITY OF HOUSTON-TEXAS A&M UNIV.

1984 FINAL REPORT



Department of Electrical Engineering  
Cullen College of Engineering  
University of Houston

NASA/ASEE SUMMER FACULTY FELLOWSHIP PROGRAM  
UNIVERSITY OF HOUSTON - TEXAS A&M UNIVERSITY

1984 FINAL REPORT

by

Bayliss C. McInnis

University of Houston - University Park

Michael B. Duke and Bob Crow

NASA Johnson Space Center.

August 1984

THE ADSORPTION OF ATMOSPHERIC XENON AND  
INERT GAS MEASUREMENTS IN SIZE SEPARATES OF THE ALLENDE METEORITE

Russell L. Palma  
Assistant Professor  
Physics Department  
Sam Houston State University  
Huntsville, Texas

ABSTRACT

Powdered and solid piece samples of the Allende meteorite were heated in various temperature steps to analyze their xenon compositions mass spectrometrically. The samples were then exposed to the atmosphere for three days. The samples were reheated to test for possible adsorption of atmospheric xenon and its release temperature.

Similar samples were exposed to a xenon gas which was strongly enriched in the light isotopes. With this unusual isotopic composition, adsorption and mass fractionation effects may easily be seen.

All of the inert gases, helium, neon, argon, krypton, and xenon, were measured mass spectrometrically from totally fused Allende samples which had been prepared by crushing and sieving into size fractions. The objective was to examine possible correlations of gas concentration and compositions with grain size.

---

Center Research Advisor: Donald D. Bogard