Abstract for January 1971 Houston meeting

Potassium-argon ages, exposure ages and radiation history of lunar rocks.

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We measured the K/Ar age in an unseparated sample and a feldspar concentrate of the Apollo 11 rock 10003. The whole sample gave an age of 3.68 x 10^9y; the feldspar concentrate of 3.86 x 10^9y (preliminary values). These results agree well with the ages obtained by Turner with the Ar^{39}/Ar^{40} method of K/Ar dating.

Kr^{81}/Kr exposure ages were measured on 5 Apollo 11 rocks and 4 Apollo 12 rocks. A clear correlation between $(Kr^{78}/Kr^{83})_{sp}$ and $(Xe^{131}/Xe/^{126})_{sp}$ is observed in these rocks. The $(Kr^{78}/Kr^{83})_{sp}$ variations reflect variations in irradiation hardness, the variations in the $(Xe^{131}/Xe^{126})_{sp}$ yield are predominantly due to neutron induced reactions leading to Xe^{131}. Different classes of lunar rocks show systematic differences in irradiation history. Several possible models explaining this correlation will be discussed.