in this laboratory in the case of $^{12}C(^3He,^3He)^{12}C$ from 4.0 to 8.0 MeV, $^9Be(p,p)^9Be$ below 4.0 and $^{24}Mg(p,p)^{24}Mg$ below 4.0 MeV. Polarization data were also obtained and fitted in the latter two cases. Results are in good agreement with those of phase shift analyses where applicable.

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FA9. Boundary Conditions and Polarization in Elastic Scattering. GEORGE L. STROBEL, *University of Georgia*—In studying polarization of elastic scattering the relation,[1]

$$\mathrm{Im}(\eta^+\lambda_{+1}+\eta^+\lambda-\eta^-\lambda)=0,$$

where λ is equal to KR$-\frac{1}{2}$, has been arbitrarily introduced. Its use brought about agreement with certain polarization measurements in the elastic scattering of protons. This relation can be derived from a boundary condition. With plus and minus referring to the $j=l\pm\frac{1}{2}$ parts of the phase shift expansion respectively, we separately take Ψ^+ and Ψ^- to be radially ingoing only at an angle of 180° at a point R near the target surface. Assuming the phase shifts to vanish for $l>$KR, and to approach $i\infty$ for $l<$KR, this condition determines phase shifts for $l=\lambda,\lambda+1$, which nearly satisfy the above relation.

[1] J. Hufner and A. De-Shalit, Physics Letters, *15*, 52, 1965.

Bulletin of the American Phys. Soc., Series II, Volume 13, Number 12 (Dec 1, 1968)

Session FB

THURSDAY AFTERNOON AT 1:30

Conference 1
(F. SIX, presiding)

Astronomy

Invited Papers

FB1. Universal 2.7°K Black Body Radiation. R. F. O'CONNELL, *Louisiana State University* (30 min.)

FB2. A Joint Program in Radio and Optical Astronomy. A. G. SMITH, *University of Florida* (30 min.)

FB3. Interplanetary Scintillation of Jupiter's Radio Emission.* DALE L. THOMPSON, *Florida State University*—The decametric radio emission from Jupiter is characterized by several distinct time scales of intensity fluctuations. The relatively slow fluctuations, on the order of several tenths of a second, are believed to be due to the presence of a spatially drifting, irregular diffraction pattern produced by the interaction of the radio waves with electron density irregularities in the tenuous solar plasma flux referred to as the solar wind. Observations of these intensity fluctuations at a triangular array of sites and their frequency dependence at a single site provide a means of determining the properties of the solar wind at distances greater than one astronomical unit from the sun. A series of spaced, simultaneous observations is discussed which determine the power spectra, intensity distribution, and frequency dependence of these fluctuations as well as the drift velocity of the diffraction pattern. Preliminary results are presented and the relation of these statistical properties of the observed diffraction pattern to the properties of the diffracting medium and the incident radiation are discussed.

* The research is supported by NASA Grant NSG-224-61.

FB4. Correlation of Jovian Decametric Source Drift with Reception Probability.* H. I. REGISTER and ALEX G. SMITH, *University of Florida*—The dependence of the occurrence probability of the decameter radiation from the planet Jupiter on both the central meridian longitude and the geocentric position of the Jovian satellite Io has been analyzed. Data collected by the University of Florida Radio Observatory from 1957 through 1968 are included in this analysis. These data indicate that the System III longitude drift of certain source features is related to a cyclic variation in the probability of occurrence of the non-Io-related radiation component, the Io-related component probability being relatively constant from year-to-year.

* Sponsored by the National Aeronautics and Space Administration, the U. S. Office of Naval Research, the U. S. Army Research Office (Durham) and the National Science Foundation.

FB5. Analysis of the Jovian Decametric Radiation based on the Beginning of Storms.* C. N. OLSSON, H. I. REGISTER, and ALEX**