proportions of important flares were associated with severe storms. In the 8 years studied, the occurrence of a flare with Comprehensive Index >10 constituted almost sufficient circumstances for the onset or continuation of geomagnetic disturbance within the next 3 1/2 days.

02.04.03 Free-Free Absorption of Gyroresonant Radiation in Solar Microwave Bursts. R. Ramaty, GSFC, Greenbelt, Md.; V. Petrovsky, Stanford University. The effects of free-free absorption on gyroresonant radiation in solar flares is considered. It is shown that large microwave bursts from the sun for which the flux density is essentially independent of frequency or increases slowly with increasing frequency can be best understood in terms of gyroresonant emission of high energy electrons and free-free absorption by the ambient thermal medium. The theory of gyroresonant emission and absorption in a magnetically active plasma is summarized and the various suppression effects (absorption below the plasma frequency, gyroresonance absorption, gyrosynchotron self-absorption, Rasin effect) are discussed. Using these results the thermal electron density, temperature, emission measure, magnetic fields and number of nonthermal electrons in the emitting region are evaluated for a flare with a flat microwave spectrum. It is found that these numbers in general are consistent with those obtained from both soft and hard x-ray observations.

02.05.03 High Resolution Measurements of the Sun at 3.71 and 11.1 cm Wavelength. R. W. Rossb and S. D. Jordan, Laboratory for Solar Physics, AND W. J. Webster, Jr., Laboratory for Meteorology and Earth Sciences, NASA-Goddard Space Flight Center, Greenbelt, Maryland 20771. Observations of the sun at 3.71 and 11.1 cm were made on January 14, 1972 using the NRAO three-element interferometer in the 2.7-1.8-0.9 km configuration. The minimum fringe spacing is 2.8 and 8.5 arc sec at 3.71 and 11.1 cm respectively. The interferometer antennas were pointed at three regions on the solar disk: an active region, a relatively quiet region and the limb at the south pole. The fringe amplitude and systematic phase rotation observed indicate that there is structure in both the active and quiet region at both wavelengths and for all spacings. Observations of structure of scale size less than 2.8 arc sec, implies the existence of spicule-like structures in the upper chromosphere at 3.71 cm. Fringe amplitudes at the time of a flare that occurred during the observations suggest that there are structures in the emitting region with sizes of the order of 3 arc sec. Such structures could be associated with the "flare point" phenomenon.

02.06.03 The Minimum Temperature in the Solar Atmosphere. R. C. Albrecht, Sacramento Peak Observatory, APCH, and C.J. Cannon, Department of Applied Mathematics, University of Sydney. A model analysis of the disk spectrum of Mg II 2796 A has been made. A one-dimensional static (no macroturbulence) model atmosphere was set up, and the emergent radiation was computed under the assumptions of a Planckian source function and radiative ionization (cf. R.O. Atay and R.C. Canfield, 1965, Ap. J., 146, 695). Initial model atmospheres assumed were the Harvard-Smithsonian Reference Atmosphere (HSSA: O. Gingerich et al., 1971, Solar Phys., 19, 367) and the Bilderberg Continuous Atmosphere (1). The calculated line profiles were required to fit the symmetrized data of R. White et al. (1972, Solar Phys., 23, 18). The profiles obtained are highly temperature sensitive, and it appears that within the above restrictions we may specify the required temperature distribution to a high precision. We find that the BCA is totally unsatisfactory above T=9000 K, 0.01. Specifically, the minimum temperature yields emergent intensities up to 100% too high. The HSSA profiles are more satisfactory, but the observed profiles require a slightly steeper temperature gradient for 0.001<T<9000 K and a slightly reduced minimum temperature of 4400 K. In particular we suggest the following modifications to the HSSA temperature distribution (retaining the same distributions of electron density and hydrogen density):

$$ T < 5000 \quad 5000 < T < 9000 $$

where J is the step number of the HSSA, running from 1 to 9 at the bottom and 0 to 9 at the top.

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03.01.05 Strömgren Photometry of Weak-G-band Stars. Richard B. Hesser, Mt. Cuba Obs., Univ. of Delaware and D. J. Macconnell, Univ. of Michigan. - As a result of the University of Michigan's objective-prism survey of the southern sky from Cerro Tololo more than 40 objects...