The Distribution of Peak Flux-Density Spectra of Solar Radio Bursts. J. P. CASTELEI and D. A. GUIDICE, Air Force Cambridge Research Laboratories — The statistical distribution of the peak flux-density spectra of solar radio bursts has been compiled for the years 1966-1971. The work is based on spectra obtained from fixed-frequency observations at 265, 606, 1415, 2695, 4995, 8800, 15400, and 35000 MHz made at the Sagamore Hill Radio Observatory. Based on data from the early years (1966-1968), a classification system was developed; this system has been discussed in previous papers. Statistically, the largest number of bursts were found to have C type spectra with a frequency of maximum emission ($f_{\text{max}}$) somewhere in the 1415 to 15400 MHz range. A correlation between the photospheric magnetic field strength of the region associated with a burst and its $f_{\text{max}}$ has been found; for lower magnetic fields there is a greater association with lower $f_{\text{max}}$ (L Band), for higher fields there is greater association with higher $f_{\text{max}}$ (X Band). For C type spectra the percentage distribution of $f_{\text{max}}$ does not appear to change systematically from year to year through the sunspot cycle, although the number of bursts per year having C type spectra shows a dramatic increase for the sunspot maximun period. On the other hand, the percentage of bursts per year having only a pure C spectra (flux density increasing with decreasing frequency with no centimeter-band maximum) shows only a small increase for the sunspot maximum years. The slowly-varying component, which is highly dependent on sunspot cycle, is known to be largest in the S band - C band range. Thus, we might associate C type bursts (thought to be chromospheric events) with the mechanism involved with the slowly-varying component, while we should associate bursts with a pure G type spectra (thought to be coronal events) with a mechanism having a low sunspot dependence.

Coronal Abundances and a Model of the Quiet Sun from Radio Observations. C. Chidzey, C. Chudker, R. Metcalf, and R. A. Wiseman, Harvard College Observatory. In this paper the best known measurements of the brightness temperature of the quiet sun are used as the basis for building up a model of the transition region, the radio spectrum a simple equation relating electron density, electron temperature, and temperature gradient is obtained in a straightforward way. By means of this equation and known values of the total intensity of ultraviolet lines, absolute abundances are calculated that are in agreement with previous determinations.

Interplanetary Solar Wind Electrons to 3 MeV. T. L. CLINE, NASA/Goddard Space Flight Center. Observations and spectral measurements have been made of interplanetary electrons in the 100 to 1500 keV region during solar quiet times with a new detector on the IMP-6 satellite. These results, when added to the existing data on lower and higher energy interplanetary electrons, provide the first essentially complete picture of the quiet-time spectrum from thermal energies of a few eV to cosmic-ray energies above 100 MeV.

Photospheric Faculae and the Solar Obliquity. G. A. Chapman, Aerospace Corp. and A. P. Ingersoll, Calif. Institute of Technology — Photospheric faculae near the equatorial solar limb may provide the excess brightness which Ingersoll and Spiegel showed would explain Dicke and Goldenberg's oblateness measurement. Three lines of evidence support this statement: 1) the excess emission of faculae may arise in optically thin regions, as required by the Ingersoll-Spiegel hypothesis; 2) faculae are sufficiently widespread on the solar surface to account quantitatively for the observed signal; and 3) temporal fluctuations in the expected signal due to faculae in 1966 are correlated with fluctuations in the observed signal at the 1σ level. (The probability of the correlation coefficient for uncorrelated data exceeding the observed value is less than 1%.) Although this evidence clearly demonstrates that faculae make a sizable contribution to the observed oblateness signal, it does not preclude an equally sizable contribution due to true gravitational oblateness. Evidence that faculae may not be the only source of oblateness signal comes from the apparent fact that the ratio of fluctuation amplitude to mean signal amplitude is greater for the facular signal than for the observed oblateness signal. However, this difference may be due to errors in reading the photographs from which the facular signal was derived, or to differences in processing the two sets of data. A year's better test of our hypothesis cannot be made until the daily oblateness signals and their standard deviations are available.

In any case, it appears that further data analysis will be necessary before a reliable value of the solar oblateness can be inferred.