known in the laboratory, or with extrapolated lines. *He*II (1) 304 A, and several higher members of the series are present. A line at 182.3 A appears to be $H\alpha$ of *C*VI. *O*VI (4) 173.08, 172.93 A, are faintly present, but not resolved. The strong line at 284.3 A is identified as *Fe*XV, as extrapolated by Edlén.

The spectrum agrees well with the photoelectrically scanned spectrum obtained by Hinteregger (*Astrophys. J.* **132**, 801, 1960). It is suggested that the resonance lines of *Fe*XVI, 336.2 A, 361.7 A, are present in the latter spectrum, but are probably absent from the photographic spectrum because of insufficient altitude. Most of the photographed lines, however, have not yet been identified, even though some are extremely intense.

Decameter-Wave Observations of Jupiter in 1961. C. H. BARROW, *Florida State University.*—A new radio observatory has been established at Florida State University and a program of decameter-wave observations of Jupiter commenced with the 1961 apparition of the planet. Broadside arrays were used at frequencies of 18.3, 19.5, and 24 Mc/sec in addition to a corner reflector operating at 18.7 Mc/sec. The 18.3 and the 24 Mc/sec arrays incorporated systems of crossed dipoles which allowed their use as drift polarimeters when Jupiter was close to meridian transit.

Histograms of occurrence probability were prepared for each frequency using the revised System III rotation period of $9^h55^m29^s.35$ given by Carr *et al.* (*Astrophys. J.* **134**, 105, 1961). The results are found to be consistent with those obtained by the writer and his colleagues in 1957 (*Astrophys. J.* **127**, 274, 1958), although the occurrence probabilities are lower. This is probably due to less favorable observing conditions as well as to decreased activity on Jupiter. In qualitative agreement with other workers a correlation with solar and geomagnetic activity was observed as well as drifts in frequency of groups of noise bursts.

The most interesting records were obtained on three nights when polarization observations were possible at 18.3 and 24 Mc/sec. At 24 Mc/sec it was found that almost every burst recorded was right-handed elliptically or circularly polarized while at 18.3 Mc/sec the polarization appeared to be essentially random. Magneto-ionic attenuation on Jupiter appears to offer an explanation of these observations, as well as other features of the decameter-wave radiation, assuming a uniform magnetic field to exist within the region of origin and escape. It is emphasized that, because of the rather crude polarimeter systems employed, these results must remain tentative although they point the way for subsequent work. It is hoped to make extensive polarization observations at four different frequencies next year.

Line Identifications in Peculiar Stars. WILLIAM P. BIDELMAN, *Lick Observatory.*—Recent studies of Lick 120-inch coudé spectrograms of several peculiar early-type stars have permitted the certain identification of lines of *Kr*II and *Ga*II. An essential feature of the latter identification has been the laboratory work of C. H. Corliss at the National Bureau of Standards. Details concerning these identifications are presented, as well as the less-definite evidence for the presence of lines of *Xe*II and *Hg*II in the spectrum of κ Cancri.

The spectroscopic characteristics of the magnetic star HR 465, which has an extremely complex spectrum, are also discussed. Lines of *Mo*II, *Nb*II, and especially *Nd*II, appear with great strength in the spectrum of this object, while lines of the elements of the iron group and *Eu*II, *Gd*II, and especially *Ce*II, are weaker than would have been expected.

It is suggested that the spectroscopic anomalies of the peculiar A stars may have resulted from the further modification, by high-energy surface reactions, of a stellar composition already overabundant in the heavy elements, and that these objects may represent a stage in the transition from a population I red giant to a white dwarf.

A Hypothesis of Localized Coronal Line Emission. D. E. BILLINGS AND R. C. LEHMAN, *High Altitude Observatory.*—Line profile measurements present strong evidence that the red and green coronal lines are produced in different volume elements along a line of sight, even when the structures seen by the two lines appear to be identical. From this we conclude that quite high-temperature gradients exist in the corona. In the presence of such temperature gradients it is possible for a temperature difference of several hundred thousand degrees to exist between ions and electrons, which could explain in part at least broad coronal line profiles. We postulate that emission in the red and green coronal lines occurs only in cooler parts of the corona, in the vicinity of energy sinks and large temperature gradients.

An Empirical Model of the Interplanetary Medium. JOHN C. BRANDT, *Berkeley Astronomical Department, University of California.*—A model of the interplanetary medium is constructed from empirical evidence. The run of the expansion velocity of the plasma w is deduced from observations of the orientations of comet tails; the density N_e near the orbit of earth can be inferred from the observations of the geomagnetic cutoff when the expansion velocity is given. This information, along with the equation of continuity and the observed electron densities in the corona, enable the rough run of expansion velocity and density to be obtained as a function of heliocentric distance from the corona out to about 5 a.u. The