then give an upper limit to the integral of longitudinal magnetic field times electron density along the ray path. It is shown that Hatanaka's measurements (Hatanaka *et al.* 1955) of solar bursts are not inconsistent with the assumption of dipole-type magnetic fields in the corona, with a field strength of one gauss at the pole. Possible measurements to determine the dispersion are discussed.

Hatanaka, T. 1955, "The Faraday Effect in the Earth's Ionosphere with Special Reference to Polarization Measurements of Solar Radio Emission," *Research Report EE 257*, School of Electrical Engineering, Cornell University, Ithaca, N. Y.
Hatanaka, T., Suzuki, S. and Tsuchiya, A. 1955, *Proc. Japan Acad.* **31**, 81.

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Cornell University,
Ithaca, N. Y.*

Cook, Allen F. and Hawkins, Gerald S. Inadequacy of recombination as the source of radiation from meteoric trains.

The assumption is made that recombination of ions and free electrons produces the observed luminosity in meteoric trains. Available theoretical and observational results are used to establish an upper limit on the intensity of radiation from this source. Recombination is shown to fail by a factor of more than two hundred to account for the observed intensity.

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Davis, Robert J. Ultraviolet stellar magnitudes.

Computations are performed from which it is possible to construct a tentative map of the sky at 1249 Å. For normal stars, it is assumed that the energy distribution can be represented by a Planck function at a temperature depending only on spectral type. Wolf-Rayet stars, nuclei of planetary nebulae, certain peculiar A stars, the sun, and the moon are considered separately. Interstellar reddening is taken into account on the assumption that absorption varies as $1/\lambda$. The limiting magnitude is taken as +2.0 in the ultraviolet; 218 objects prove to be brighter than this limiting magnitude. Of these 211 are normal, only the sun is of spectral type later than A1. The results of this survey may form the basis for a rocket experiment, or for an experiment from an artificial satellite.

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Deutsch, Armin J. The dead stars of Population I.

It has been shown that the M5 II star α Herculis and its visual companion are enveloped in an expanding gas cloud with a diameter of at least 150,000 times that of the sun. This gas has been expelled from the M star and is being lost into the interstellar medium at a rate of at least a solar mass in 3×10^7 years. Since the shell-type absorption lines of this envelope are characteristic of all M stars more luminous than normal giants, it is probable that all these objects are losing mass at a comparable rate. By extrapolation of the observed rate of mass-loss and the observed space-density of M giants backwards for 5×10^9 years, it is found that the number of M giants that have "died" is nearly equal to Salpeter's estimate of the total number of "dead" stars of Population I. This is the number of stars that have populated the main sequence above $M_v = +3.5$. The remnants of these originally massive stars are probably the white dwarfs. Half or more of the present interstellar gas may once have been in an M giant. A large fraction of the He, C, N, O, Ne, and the stable elements heavier than Cu, which are now in interstellar gas and early-type stars, may have been synthesized in the hot cores of these past generations of M giants.

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Duncombe, Raynor L. Relativity effects for the three inner planets.

Results of a recent discussion of the meridian observations of Venus 1750-1949 have been examined for the relativity effect in the observed motion of the perihelion. Corrections to Newcomb's theoretical secular variations of the perihelia of Mercury, Venus, and the Earth due to the introduction of a new system of planetary masses (Clemence and Brouwer 1955) were applied and the empirical terms were removed. The correction $+0''.79 \pm .13$ to Newcomb's value of the general precession ($+1''.50$ to the value used in his tables of Venus), given by Clemence and Brouwer, was used. The deduced theoretical secular variations followed by the observed values are given in the table. The probable errors of the theoretical values arise from the probable errors of the new system of planetary masses and of the revised precession.

The observed secular motion of the perihelion