It is found that on all days investigated at Cornell the enhanced 200 Mc/sec emission comes from one or two localized areas on the sun. The burst sources are found to be associated with those regions on the sun which must be designated as active from the optical point of view. The coincidence in position as well as in time between the two radio outbursts and the two optical flares provides strong evidence for the association of the two phenomena.

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Garstang, R. H. Line strengths in intermediate coupling for O II, Ne II, S II, and A II.

Studies of curves of growth require a knowledge of theoretical or laboratory line strengths. The work of K. O. Wright and others has shown that theoretical intensities based on the assumption of *LS* coupling are often not sufficiently accurate. The calculations should be refined to take into account departures from *LS* coupling. This has been attempted for the $3s - 3p$ arrays in O II and Ne II and for the $4s - 4p$ arrays in S II and A II. The calculations for O II, Ne II and S II are straightforward and the results show that the departures from *LS* coupling are relatively small. Numerical difficulties have been met in the A II calculations due to certain large perturbations of the energy levels with $J = 3/2$. The only check on the computations is the agreement between observed and calculated Landé g - values for Ne II and A II. The agreement is excellent except for A II ($J = 3/2$); in the latter case more accurate calculations are required.

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Gossner, Joseph L. Polarization measures of 293 stars in Aquila.

Photographic polarization measures of faint stars were made with the 26-inch refractor for the study of galactic structure in Aquila. The method of measuring polarization, using calcite, is that described by Markowitz.¹ Two hundred and ninety-three stars were measured in a field 50 minutes of arc in diameter centered on the star HD231564. This star, which occurs on the edge of a dark cloud, is listed by Popper as c B1 with the high color excess $E_1 = +0.58$ mag. It shows a polarization of 3.5 per cent ± 0.2 in position angle $135^\circ \pm 3$.

The other stars give the following results:

m_{pv}	Mean Polarization	Angle	n
11.5-12.5	$1.2\% \pm 0.15$	$119^\circ \pm 2$	45
12.5-13.5	1.9 ± 0.15	118 ± 2	105
13.5-14.5	1.8 ± 0.15	120 ± 2	142

The magnetic vector for these three groups is within a degree of being perpendicular to the galactic equator.

By percentages we get the following results:

Polarization	Mean Polarization	Angle	n
$< 1.50\%$	0.6%	114°	93
1.51 to 2.50	1.8	121	104
> 2.51	2.9	120C	95

It appears that at least two-thirds of the stars in this one-half square degree field are polarized more than 1.5 per cent.

The estimated distances of the polarized stars are about a kiloparsec. Additional information on the colors and spectra of some of the polarized stars would serve to fix the distance of the polarizing cloud. Plates of two nearby regions, one clear and the other heavily obscured, have been secured for future study.

1. *A. J.* **56**, 134, 1951; **55**, 175, 1950.
2. *Ap. J.* **111**, 495, 1950.

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Green, Louis C., Marjorie M. Mulder, Paul C. Milner, Eleanor Krawitz and David Mace. Superposition of configurations and the ground state of He I.

To investigate the problem of configuration interaction in a simple case, the Hylleraas three-term and six-term expressions for the ground state wave function of He I were expanded in a series of the form

$$\Psi_H = \sum c_i \varphi_i^N P_i^N$$

where the φ_i^N are normalized functions of r_1 and r_2 , the distances of the two electrons from the nucleus, and the P_i^N are the normalized Legendre functions of order i of the cosine of the angle between the two radius vectors. In terms of central field wave functions the only configurations which contribute to φ_0 are nsms and the only ones contributing to φ_1 and φ_2 are npmp and ndmd respectively. The results for the c_i 's are given in Table I.

The stability of the c_i 's is indicated by the similarity of their values in the two expansions. The presence of considerable components other than nsms in the 1S ground state is demonstrated.