<i>Al</i> II	1670.8* (blended with <i>Fe</i> II)
<i>Si</i> II	(1816.9*, 1808.0), (1533.4, 1526.7), 1309.3, (1265.0, 1260.7)
<i>Si</i> III	1206.5
<i>Si</i> IV	(1393.7, 1402.7)
<i>S</i> II	1259.5*
<i>Fe</i> II	(1559.1, 1563.8, 1570.2, 1574.9), (1659.5, 1670.8 [blended with <i>Al</i> II])

Parentheses indicate lines of a single multiplet and asterisks show *raies ultimes*.

The astigmatism was removed from the spectrograph for the region below about 1600Å and the sun's image was focussed on the slit. Therefore, limb darkening or brightening can be looked for in the uniformity of density along the spectrum lines. In general, the emission lines are remarkably uniform indicating no limb darkening. This is in marked contrast to the region of Fraunhofer absorption, where the effect of limb darkening is conspicuous in the spectra. No definite indication of limb brightening has been found in the emission lines although a small amount may be concealed by small movements of the sun's image along the slit during the exposures due to tracking errors.

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Kiess, Norman H. The presence of a faint *CH* band in the solar spectrum.

The $^2\Delta - ^2\pi$ system of *CH* is present both in hydrocarbon flames and in the solar spectrum. The (0, 0) sequence of this system is at 4315Å, while the recently analyzed (0, 1) sequence is at 4890Å. The laboratory source used for this analysis is a lean acetylene-oxygen flame burning on a rectangular slot burner. Recent work at the National Bureau of Standards has revealed the presence in the solar spectrum of many more *CH* lines than have hitherto been known. Among the faint solar lines are those belonging to high rotational quantum numbers in the (0, 0) sequence of the $^2\Delta - ^2\pi$ system. Intensity measurements in the flame show that the leading lines of the (0, 1) band of the $^2\Delta - ^2\pi$ system are of the same intensity as those belonging to high rotational quantum numbers in the (0, 0) sequence of this system. Thus one might expect to find the leading lines of the (0, 1) band among the faint lines of the solar spectrum. This expectation is confirmed by the identification of eight of the leading lines of the (0, 1) band with faint solar lines.

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Kolb, Alan C. Theory of the first-order Stark broadening by ions and electrons.

The instantaneous local electric field of an ensemble of ions and electrons removes the degeneracy in a hydrogenic energy level. In the wings of the Balmer lines, where the separation of the Stark components is large, we treat the perturbing field in the adiabatic approximation. The ions and electrons are assumed to have classical paths and the perturbation due to the entire ensemble of ions and electrons is introduced directly into the adiabatic theory. The resulting Fourier integral is expressed in series form and it is found that the electrons and ions are equally important in forming the Balmer line wings. In the limit of zero electron density the series reduces to the Holtsmark distribution. In the limit of zero ion density the radial Cauchy distribution is obtained, in contrast to the usual dispersion line shape. In addition, the electron half-width parameter is numerically different than is obtained by Unsöld. According to this calculation the general effect of the electrons is to depress the central intensity and to increase the intensity on the wings relative to the Holtsmark distribution for ions alone. These features have been observed in Balmer line profiles obtained in the University of Michigan shock tube and at Kiel by H. Griem.

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Krook, Max, Layzer, David and Menzel, Donald H. Mechanisms in prominence activity.

In a previous paper, we have indicated that sunspots arise from volumes detached from an azimuthal magnetic field that develops from torsional oscillations of the sun's interior.

The toroidal current systems associated with a doughnut-shaped volume produce an internal magnetic field whose pressure tends to expand the region against the external gas pressure. The volume is less dense than its surroundings and, hence, rises because of magnetic buoyancy, as noted by Parker.

When the toroidal current sheets extend above the solar surface, the internal pressures may appreciably exceed those of the sun's atmosphere. As a consequence, we expect the sheets to collect into loops, concentrating the matter simultaneously, through operation of the "pinch effect." This picture of prominences in the vicinity of sunspots is consistent with known masses of such