TABLE I (*continued*).

Star	HD mag.	Type	No. of spectrograms	Comment
V636 Cen	8.5	G0	2	Lines single. Sharp.
HD 135681	7.0	A2	2	Lines single and not particularly diffuse for a period as short as 0.5 days.
HD 147683	7.2	B8	9	Fair double lines.
HD 151676	6.1	A3	3	Single lines.
FV Sco	8.0	B9	3	Diffuse single lines.
HD 15645	8.4	A0	2	Lines single.
V701 Sco	8.2	B5	2	Lines double. Very difficult.
V393 Sco	7.7	B9	2	Lines probably double.
HD 161783	5.9	B3	8	Double lines. Period must be double that given by Strohmeier. Visual binary.
V1647 Sgr	7.0	A0	3	Two components. Visual binary.
ϵ CrA	5.0	F5	2	Diffuse single lines.
V525 Sgr	8.6	A2	1	Broad single lines.
HD 187418	8.1	A2	2	Lines single.
HD 199603	5.7	A3	4	Lines single.
HD 209278	6.5	A2	1	ADS 5562. The preceding component, which is the fainter visually but brighter photographically, is the A-type star and also presumably the eclipsing variable, the other component being of type K. Lines single.

The stars designated by HD numbers were found to be eclipsing by Strohmeier and his colleagues. Failure to detect double lines in a system does not imply that they may not be found on spectrograms obtained at other phases and/or with higher dispersion. Sahade has obtained spectrograms of TU Mus, SZ Cen, and V393 Sco (private communication).

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Carbon Monoxide Absorption in the Solar Ultraviolet Spectrum. J. R. PORTER, S. G. TILFORD, AND K. G. WIDING, *E. O. Hulburt Center for Space Research*.—Goldberg, Parkinson, and Reeves (*Astrophys. J.* **141**, 1293) recently identified various features in the solar ultraviolet spectrum as band heads of the fourth-positive group in CO.

A careful study of the 1500–2000 Å region in a high-resolution spectrum secured by Garrett, Purcell, and Tousey has been made in order to make the identification of CO as definite as possible.

Band heads definitely present are:

(v', v'')	λ of Head
0, 3	1712.2 Å
1, 4	1729.5
0, 4	1774.9
1, 5	1792.6

These heads were also identified by Goldberg, Parkinson, and Reeves. Probably present are the (0, 1) head at 1597.1 Å and the (2, 5) head at 1747.3 Å. We are unable to confirm the presence of weaker

bands from lower state vibrational levels $v''=6, 7$, and 8.

Rotational structure resolved in the solar (1, 5) band was found to be in agreement with the structure computed from the known molecular constants for an assumed temperature of 4700°K.

Although no band heads from the heavily populated $v''=0, 1$, and 2 levels are conspicuous, the general level of the solar spectrum in the region where the (0, 0), (0, 1), and (0, 2) bands occur follows the Harvard shock tube spectrum of CO. The absence of conspicuous heads is partly due to massive overlapping of bands, as pointed out by Goldberg *et al.*, but possibly also because of absorption continua of the metals in the same region. Fraunhofer lines are seen at wavelengths above 1700 Å where the CO absorption is relatively weak; the somewhat abrupt change toward a generally structureless continuum shortward of 1700 Å may be associated with the onset of strong CO absorption in the (0, 2) and (1, 3) heads at 1653 and 1670 Å.

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Preflare Phenomena Observed in H α . HARRY E. RAMSEY AND SARA F. SMITH, *Lockheed Solar Observatory*.—Two hundred ninety-seven major flares were studied for changes occurring within a 2 h interval prior to the start of the flares. In the most common order of occurrence, preceding flare start and continuing through flare maximum, the nine changes most often observed were: (1) darkening of an absorption feature, (2) start of a preflare brightening, (3) expansion of an absorption feature, (4) breakup of the absorption feature, (5) transition to emission in an absorption feature, (6) ejection of an absorption feature, (7) additional bright or dark ejecta, (8) phase of minimum visibility for an absorption feature, (9) temporary appearance of absorption in a new location.

The darkening phase preceded over 53% of the flares observed in the blue wing, H α -0.5 Å, 44% of the flares observed in the red wing, H α $+0.5$ Å, and only 12% of the flares observed in the center of H α . Statistically, the darkening phase begins to increase markedly around 60 min prior to the flares and maximizes in frequency of occurrence between 10 and 20 min prior to the flares. The distribution of previous flares and preflare brightenings of all kinds is similar to the distribution of the preflare darkenings. Twice as many brightenings occur within the hour preceding the major flares as compared to the previous hour.

For center H α and red wing observations, a larger percentage of flares near the limb than near the center of the disk are preceded or accompanied