ties at longer wave lengths, also appear consistent with a thermal emission spectrum, although the evidence is not as good.

Since the intensity and size of the source toward the galactic center, 17S2A, is comparable with the Orion nebula source at both 3 and 9.4 cm, it is of interest to consider the possibility that source 17S2A is an *HII* region. There are alternative distances to consider. First, at 3000 pc from the sun there exists a group of OB stars (Hiltner, 1954) with associated bright emission nebulae (Sharpless, 1953). The radio source position at $l = 327^\circ.7$, $b = 1^\circ.4$ (Lund) lies among several of these nebulae having about the right size, but they are not as bright as the Orion nebula nor are the exciting stars as hot. It would be helpful to have a more precise source position. Secondly, if this source is at the galactic nucleus, its intensity can be accounted for by a Strömgren sphere 36 pc in diameter containing 80 electrons per cm^3 (38 solar masses) excited by three O6 stars, or their equivalent.

Since at longer wave lengths this source appears to be embedded in an emitting region of complex structure and possibly of mixed spectral types, it is difficult to obtain its true spectrum. However, it is possible to rule out a Cassiopeia-A type spectrum on the basis of the long wave length intensities (Pawsey 1955) and of the maximum allowable *HII* opacity as determined from the centimeter-wave emission measures in this direction.

REFERENCES

- Baade, W. and Minkowski, R. 1954, *Ap. J.* **119**, 206 and 215.
 Haddock, F. T., Mayer, C. H. and Sloanaker, R. M. 1954, *Ap. J.* **119**, 456 and *Nature* **174**, 176.
 Hagen, J. P. and McClain, E. F. 1954, *Ap. J.* **120**, 368.
 Hiltner, W. A. 1954, *Ap. J.* **120**, 41.
 McGee, R. X. and Bolton, J. G. 1954, *Nature* **173**, 985.
 Pawsey, J. L. 1955, *Ap. J.* **121**, 1.
 Sharpless, S. 1953, *Ap. J.* **118**, 362.

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Hatanaka, T., Suzuki, S. and Tsuchiya, A.
 Observation of the polarization of solar radio
 bursts at 200 Mc/sec.

While working at Cornell University during 1952-53, it was found out by one of us that the solar radio bursts were almost linearly polarized when the source was very close to the limb of the sun's disk (Hatanaka 1953). The necessity was then discussed for a new type of polarimeter which gives simultaneously at least four independent pieces of information on the polarization. A radio polarimeter has been built since at the

Tokyo Astronomical Observatory, University of Tokyo. With a pair of crossed dipoles attached at the focus of a 10-meter paraboloid of equatorial mounting and suitable combinations of retardations, it gives six components of polarization, two circular and four linear, almost simultaneously by electronic switching. One set of observations is obtained in 1/200 second.

A preliminary analysis (Hatanaka *et al.* 1955) of the observations made at Tokyo during December 1954 and January 1955, reveals the following facts on the polarization of the so-called polarized bursts: (1) The radiation is a mixture of two components: one is elliptically polarized and the other random. (2) The ellipticity varies from nearly 100 per cent to 10 per cent. The variation from day to day is similar to that of the ellipticity of a circle put tangentially on the sun's surface at the position of the source and viewed from the earth. (3) The degree of polarization, or the fraction of the elliptically polarized component, is more than 90 per cent on most days, but sometimes drops below 50 and even down to 10 per cent. This variation is not well correlated with the position of the source on the sun's disk. It is suggested that the degree of randomness might be associated with the non-isotropic nature of the magnetic field in the solar atmosphere where these bursts are emitted. (4) The tilt angle of the ellipse is almost constant during the observing time in a day, but is different on different days. It is pointed out that the direction of the polarization ellipse is rotated by some amount because of the Faraday effect in the earth's ionosphere. The observing frequency is 200 Mc/sec, both at Cornell and Tokyo.

Hatanaka, T. 1953, *Research Report EE-179*, Cornell Univ.
 Hatanaka, T., Suzuki, S. and Tsuchiya, A. 1955, *Proc. Japan Acad.* **31**, 81; also *Publ. Astr. Soc. Japan*, in press.

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Heard, J. F. and Boshko, Olga. The orbital elements of the hydrogen-poor spectroscopic binary HD 30353.

The spectrum of the star HD 30353 has been studied by Bidelman who also announced it as a single-line spectroscopic binary with an unusually large mass function. The spectrum has been classified as A5, but it is peculiar, especially in that the hydrogen lines are so weak as to suggest a real deficiency of hydrogen.

Orbital elements have been obtained by a