

## ASTRONOMY

# Cosmic Dust Cloud Near

➤ A GIANT dust cloud relatively near the solar system blots out much of the light of stars beyond it, Dr. Bart J. Bok and Uco van Wijk of Harvard Observatory's Boyden Station in South Africa reported to members of the American Astronomical Society meeting in Washington.

This cloud cuts off all except one-fifth of one per cent of the light from one of the stars within two degrees of the large star cloud in the constellation of Sagittarius, the archer, visible in the southern sky these summer evenings. This star is relatively near us, astronomically speaking, being only about three million billion miles away.

If there were no cloud, this blue-white star would be of third or fourth magnitude and easily seen with the unaided eye, the astronomers found. The cosmic dust dims the star fully six and a half magnitudes so that a telescope is needed to spot it.

In the direction of the Sagittarius Star Cloud, only two-fifths of the light from a

star 3,000 light years away, or less than 700 times as far as Proxima Centauri, our nearest star neighbor, is permitted to pass on to the sun and earth. Only one-quarter of the light from stars 7,000 light years away gets through to the earth.

Probably two-thirds or more of this light is absorbed by cosmic dust clouds within 7,000 light years of our sun. The remaining 20,000 or more light years that separate us from the center of the Milky Way galaxy to which our solar system belongs are relatively transparent, Dr. Bok, acting superintendent of the station, and Mr. van Wijk conclude.

The Harvard astronomers have just surveyed five key sections of the Southern Milky Way, measuring precisely the colors of 106 distant stars of known color. Varying differences between the measured and real colors of these stars help them picture the obscuring dust cloud.

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ancestors of 500 years ago and the Indians who populated this country at that time.

"If we had 500 years of weather records, instead of only 50," Dr. Gilman said, "we might be able to do the job." He believes that the long range forecasting of droughts by statistical methods will have to wait until future generations have more data.

In the meantime, other weathermen are turning to different methods of long range forecasting. One such, based on the overall circulation of the weather over the northern hemisphere, is being used by the Weather Bureau with considerable success.

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## METEOROLOGY

# Dry-Month Runs Likely

➤ IF JULY turns out to have been an extremely dry month in any section of the country, it is a little more probable than mere chance would dictate that August will be dry too.

This finding, a step in attempts to forecast the frequency of droughts, is based on a study of 50 years of weather records at 46 U. S. Weather Bureau stations and four areas. The study was made by Drs. C. S. Gilman and J. T. Riedel, climatologists of the Weather Bureau.

If the persisting drought of the early 1930's happened by chance, Dr. Gilman told SCIENCE SERVICE, then, statistically, another similar drought should not occur

there for thousands of years. However, if there is some controlling force which tends to make dry weather persist, once it has started, then droughts will occur more frequently.

The study was an attempt to find out whether such persistence occurred. The scientists discovered that it is more likely that one dry month will be followed by another than mere chance would dictate. Their report appears in the Weather Bureau's MONTHLY WEATHER REVIEW (March).

However, the weathermen concede, they are a long way from predicting the frequency of future droughts in any precise manner. For this they blame our European

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