

RADIO ASTRONOMY

Hydrogen Gas Expands

An expanding ring of hydrogen gas moving outward from the Milky Way Galaxy and a whirling central disk of the gas, detected by radio astronomers, have been reported.

AN EXPANDING ring of hydrogen gas that just appears—where it comes from nobody knows—is one of the latest additions to our Milky Way galaxy, a Dutch astronomer reported at the National Academy of Sciences meeting in Bloomington, Ind.

This ring of gas is moving outward from the dish-shaped galaxy in large quantities, Dr. J. H. Oort of Leiden Observatory told scientists attending a symposium on radio astronomy. In fact, the quantities of gas are so large that at the rate the gas is moving it would be exhausted in 10,000,000 to 15,000,000 years if it were not being constantly replenished.

The source of the hydrogen gas is one of the current puzzles facing radio astronomers. One possible solution suggested by Dr. Oort is the corona of gas that surrounds the Milky Way. However, astronomers then face the problem of where this coronal gas comes from.

Another contribution to knowledge of our galaxy is the discovery reported by Dr. Oort of a flat central disk of hydrogen gas some 3,000 light years in diameter that is rotating in a swirl close to the center of the Milky Way. A light year is the distance light, traveling at 186,000 miles a second, covers in one year. Astronomers use the term to describe the huge distances that separate the various objects in the universe.

Although radio astronomy has extended vastly the range of what can be "seen" in the universe, it is doubtful that many of the "stars," nebulae and galaxies identified as radio sources will be further identified optically by telescopes. This appears to be the consensus at the symposium. About 10% of the radio sources that are reported will probably be checked optically, said Dr. R. Minkowski of Mt. Wilson and Palomar Observatories.

The size of some of the heavenly bodies identified as radio sources poses a problem for optical detection. For example, Dr. Minkowski pointed out that Cygnus A, some 600,000,000 light years away from the earth, appears to be one-fifteenth the diameter of the sun as a radio object. The optical size of Cygnus A, which is two galaxies in collision, is considerably smaller.

Recent radio astronomy studies have also indicated that Venus has a constant temperature of 500 degrees Fahrenheit night and day.

Dr. Joseph A. Giordmaine of Columbus University reported that this temperature, detected by radio measurements below Venus' cloud cover, is the highest among the planets except for Mercury.

So far astronomers cannot account for the source of this heat. Dr. Giordmaine said it is not very probable that a sea of

water is the heat source, as had previously been suggested.

In commenting on the future of radio astronomy, symposium chairman Dr. Merle A. Tuve of the Carnegie Institution of Washington pointed to the need for keeping radio frequency bands free for scientific studies.

Television and "regular" radio interfere with astronomers receiving signals from heavenly sources. International agreements could result in some frequency bands being kept clear for the exclusive use of astronomers attempting to learn more about our universe.

Science News Letter, November 28, 1959

PSYCHIATRY

Psychiatry Dips Into International Politics

A PSYCHIATRIST who has just visited Russia dipped his finger into international politics momentarily.

Dr. Nathan S. Kline, research director at Rockland State Hospital, Orangeburg, N. Y., compared psychiatric care and medical facilities in the U.S.S.R. with those in this country to colleagues at the New York Academy of Sciences.

In summary, he said, the manner in which medical services and research are centrally regulated are reflections of the entire approach to societal structuring. The Russian people find a highly centralized government to be very desirable. The only alternative that they can imagine would be utter chaos. Since in the United States this chaos does not exist, obviously, the Russian thinks, there must be a hidden presidium of Wall Street capitalists and other undesirables who do in reality run the country, Dr. Kline explained.

Americans are merely "duped" into believing that they are in a democracy and the "illusion of choice" is a manipulation on the part of those in power to provide a pretense of participation in government.

The various approaches to living one's life are themselves inconceivable to the Soviet citizen. He is taught that one group is predestined to contend with another until only the strongest survives. Therefore, compromise and agreement mean one thing in the U. S. but something quite different in the U.S.S.R.

From the Soviet point of view, for instance, the trade union's major objective should be to wipe out the capitalists; and in turn, the employer should be continuously scheming to abolish the rights of the workers. A compromise or agreement is therefore, from the Soviet viewpoint, a temporary measure until some way of beating the enemy has been found, Dr. Kline said.

The fact that one might compromise because there is some merit or justice to the other person's point of view seems to them nonsensical. Opposing elements are always out to destroy each other and there will be no peace until one of them exhausts itself, he concluded.

Science News Letter, November 28, 1959



PATIENT WORKERS—Patients at the Bechterev Hospital, Leningrad, U.S.S.R., are shown manufacturing hair curlers.