

## ASTRONOMY

# Three New White Dwarfs Discovered in the Heavens

**T**HREE new super heavyweights among stars, so solid that each cubic inch of their substance weighs not pounds but tons, are the latest discoveries made by Dr. G. P. Kuiper using giant telescopes of McDonald Observatory at Ft. Davis, Texas, and Yerkes Observatory at Williams Bay, Wis.

Known as white dwarfs, the newly found heavyweights are called Wolf 1516, the primary of the wide double star Wolf 672, Ross 640. This brings the number of white dwarfs known to 22, all stars relatively near the earth.

Wolf 1516 is believed to have a diameter about four-tenths that of the earth and such dense material that it weighs between 500 and 1000 tons (1,000,000 and 2,000,000 pounds) per cubic inch. It has, however, not yet had its size and weight precisely determined, but it resembles an older one, A.C. 70 degrees 8247, that does have this amazing super-weight.

These two stars are the hottest white

dwarfs known, with surface temperatures of over 30,000 degrees Centigrade.

Only two other white dwarf stars, Wolf 457 and Wolf 219, are known to be similar to these stars. They are possibly even slightly heavier, at most about double in density.

The other two new white dwarfs are probably less extreme. Dr. Kuiper has not yet finished his studies of them. Two other stars, Ross 22 and Wolf 923, are suspected of belonging to the same class and are also being investigated further.

More than half of all the white dwarfs known, 13 out of the 22, have a weight nearly the same as the famous companion of Sirius, about 3 tons per cubic inch, while the rest of them are heavier.

These very dense stars may be the result of a great stellar explosion, causing a collapse of a more ordinary star into smaller space. One idea is that they consist of stripped atoms, deprived of their electrons.

*Science News Letter, December 23, 1939*

## PSYCHOLOGY

# Americans Won't Make War But Willing Others Should

*This is an authoritative article prepared by the Society for the Psychological Study of Social Issues for release through Science Service. Such articles present results of current research on war and war propaganda.*

**E**DUCATED Americans have revealed that they are willing to do very little toward promoting a war. But they would be willing for others to do slightly more war-mongering than they would care to engage in themselves.

Their attitudes were revealed when Prof. Floyd H. Allport and Dr. Gertrude A. Hanchett, of Syracuse University, asked 150 individuals what they would be willing to do in certain international situations in which this country might become involved. They were asked to suppose that a foreign power is getting ready to seize American colonial possessions, that a foreign power is preparing to seize part of the United States, that this power is preparing to

destroy American military defenses, and that it is threatening and preparing to seize the government of the United States.

They were allowed to say whether they would approve of 48 such acts as marching in a preparedness demonstration, contributing financially to help war propaganda, making speeches advocating that the American ambassador be recalled, publishing incendiary articles, and arguing for war in conversations.

A group of experts then decided whether the approval of a given act meant that the individual would wish to have the war promoted, that he would be putting forth effort in producing the war, and that he would be effective in causing the conflict. These experts concluded that speech-making, writing and publishing, damaging property of aliens or injuring them, or invading enemy territory are more effective in producing

war than consenting to war, talking about it, petitioning officials, or mass demonstrations.

In spite of these terrifying though imaginary situations, the people tested are willing to do surprisingly little toward promoting war. Their average scores did not reach three on a scale of ten points. They would do a little more war-inciting to repel threats of invasion, of undermining military strength, and of getting political control of the United States than they would in respect to threats directed toward the country's foreign possessions. The difference, however, was small.

In actual wartime hysteria when such threats become real rather than imagined citizens might be much more "war-like" than they admitted while taking the test. These results, nevertheless, show what a group of Americans feels and thinks at the moment. It appears that, except for a small and emotionally excitable minority, Americans really do not do very much toward the production of their wars.

Their attitude is, perhaps, a "permissive" one rather than one of participation. Rather than decide international issues themselves, citizens seem to trust their leaders to handle the situation. When the leaders declare war, citizens then wholeheartedly support the cause.

Older people, whose ages averaged around thirty, are slightly less inclined to promote war, according to these tests, than the younger group whose ages are around twenty.

*Science News Letter, December 23, 1939*

## AGRICULTURE

## Making Apples Stick Is Task of Chemical

**A**PPLS can be made to stick on the trees, instead of falling off prematurely and thereby causing much loss to the orchardist, simply by spraying them with dilute solutions of some of the recently discovered growth-promoting chemicals, it has been discovered by a three-man research team working at the U. S. Department of Agriculture research station at Beltsville, Md.

Most effective of the spray materials are naphthalene acetic acid and naphthalene acetamide. Solutions as weak as .00025 per cent. caused trees to hang onto more than 98 per cent. of their fruit, while unsprayed control trees lost from 64 to 91 per cent.

The three men, Dr. F. E. Gardner, P. C. Marth and Dr. L. P. Batjer, report their results in *Science*.

*Science News Letter, December 23, 1939*