

## ASTRONOMY

# First Stellar "Birth"

International Astronomical Union hears California astronomer report discovery of what may be the first observations of stars being born.

► STAR "BIRTH" may have been observed for the first time.

Dr. George H. Herbig, astronomer at the University of California's Lick Observatory, reported the possibility to the International Astronomical Union meeting in Dublin, Ireland.

If confirmed, Dr. Herbig's observation will be a major milestone in astronomy, supporting the idea of continual birth of new stars and helping to explain how these stars are formed.

Dr. Herbig showed astronomers from all over the world two photographs, taken seven years apart, of the same point in the Orion Nebula.

In the first of these photographs, taken in 1947, there are three stars imbedded in a dark cloud of dust and gas. In the second photograph, taken in 1954, five stars appear where there were only three in 1947.

The implication is that the two new stars may have been born by condensation of material from the cloud.

This view is given support by the nature of the five stars. They are believed to be "infant" stars in the scale of stellar evolution.

The research supporting this stellar birth idea began with work reported in 1945 by Dr. Alfred H. Joy of Mt. Wilson Observatory. He cited a peculiar type of rare star which was always associated with dark clouds of dust and gas between the stars.

These stars are luminous, but do not appear to us to be very bright because of their great distance. They are so rare there are few in our stellar neighborhood. They are known as T Tauri stars because a long-known variable of this type is thus named.

Over the years, astronomers have gathered evidence that Dr. Herbig said strongly indicates the T Tauri stars are newly formed objects condensed out of the gas clouds in which they are imbedded.

He pointed out that the T Tauri stars give more energy for their mass than other stars in existence for billions of years, they rotate at greater speeds, and their distribution and spectra argue for recent birth.

Dr. Herbig's 1947 picture first became important because the spectra suggested the three stars at that date were even younger, or "infant," T Tauri stars.

When the 1954 photograph showed the existence of two more stars and a brightening of the magnitude of the three original stars, Dr. Herbig was forced to consider the possibility that the birth of two new stars had been observed.

"Our understanding of what is taking place could hardly be more incomplete," Dr. Herbig said cautiously, "but it may be

that we have witnessed the opening phase of an episode in stellar evolution."

The actual birth of the two new stars would have occurred about 1,600 years ago—the time it takes light, traveling at 186,000 miles a second, to reach the earth from the Orion Nebula.

Science News Letter, September 10, 1955

## ASTRONOMY

## Space Travel to Make Astronomy Useful Science

► TEN TIMES as many big telescopes and ten times as much astronomical research are needed in the world, Dr. Otto Struve, president of the International Astronomical Union, said in his presidential address opening the Union's 9th general assembly, which was held in Dublin, Ireland, and was attended by astronomers from all over the world.

The noted University of California astronomer pointed out that, largely because of the stimulus it has given to the study of nuclear energy, astronomy is not now considered so "useless" as it was 25 years ago.

"Moreover, in these days of serious consideration of such future developments as an artificial satellite of the earth, and even of space travel, it promises to become one of the useful sciences in a practical sense," Dr. Struve said.

The scientist pointed out that any astronomer can think of dozens of observation programs that cannot now be provided with existing telescopes. The 200-inch Palomar telescope cannot handle all of the problems that remain to be tackled, he said. A 10-fold increase in new astronomical facts is needed to "feed" theoretical studies, he added.

Dr. Struve decried a disquieting increase in the disparity of astronomical effort in different countries. He urged small or war-disturbed countries to send scholars abroad for training in astronomy.

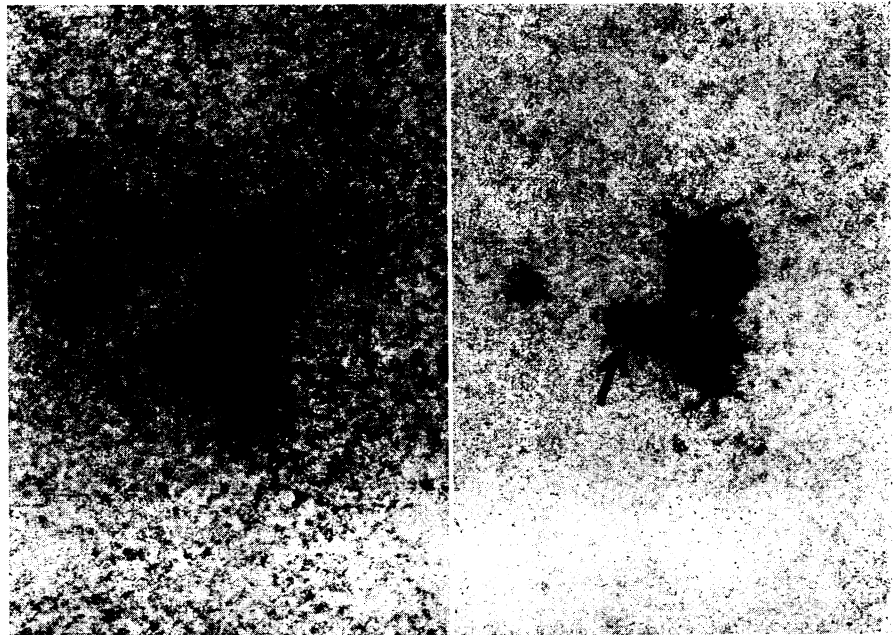
He also recommended that special efforts be made to induce able persons to enter the field, and that diversification in the construction of telescopes be planned to suit climatic and other conditions.

"Countries which have poor climatic conditions might concentrate upon radio telescopes," he suggested, "while others with good day time seeing might emphasize solar research."

The International Astronomical Union's executive committee, he said, "stands ready at any time to furnish advice on these questions."

Dr. Struve emphasized that the international character of astronomy required the "active participation of all civilized nations."

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**STARS ARE "BORN"**—These two photographs, taken by Dr. George H. Herbig of the University of California's Lick Observatory, suggest the "birth" of two new stars. The photograph at left, taken in 1947 of a point in Orion Nebula, shows three stars. At right is the same point in 1954, apparently showing five stars. Arrows point to new stars, which are thought to have been born by condensation of dust and gas.