

## ASTRONOMY

# Billion Suns With Planets

Probably one star in every thousand has planets circling it just as the earth circles the sun, Yerkes astronomer estimates.

► THERE ARE about a billion suns in the universe, each with a family of planets circling around it just as the earth, Mars, Venus and the other six planets revolve around our sun, Dr. Gerard P. Kuiper of Yerkes Observatory of the University of Chicago reported.

Probably one star in every thousand, possibly one in every hundred, has a number of dark little worlds like our own earth which are its planetary companions, Dr. Kuiper estimates.

"One can only speculate on the possible forms of life which may have developed on these many unknown worlds," Dr. Kuiper states. "It would be very strange indeed if life on these distant planets, millions and billions of miles farther away than the sun's most distant planet Pluto, should be at all similar to life as we know it here on earth."

We shall never be able to see one of these dark little worlds, shining only by reflected light, beyond our own solar system. But many stars are known to have companions bright enough to be seen, or

massive enough to make their presence known through their pull on their companion star.

At least half of the stars in the universe are either double or multiple systems, Dr. Kuiper states (PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, Jan.). In fact, almost all stars probably originated as components of double or multiple systems.

There is only one chance in a thousand that a star-in-the-making would have a small-enough angular momentum to allow a single, rotationally stable star to be born. But many of the original multiple stars must have dissolved later because of mutual perturbations in multiple systems or because passing stars force double or multiple stars apart by gravitational pull. At present one in every three or four stars is single.

A small pre-star cloud moving about a primitive sun may form either a single bright star companion or a family of dark planets, Dr. Kuiper states. This would depend entirely on the way matter within the secondary cloud is distributed.

The cosmic cloud from which were created the planets which circle our sun was probably about a tenth as massive as the one from which the sun was formed. This light, gaseous covering of the sun undoubtedly extended from where we now find the planet Mercury to where Pluto moves in its orbit, or even beyond.

Five to ten baby planets like Ceres were formed between the orbits of Mars and Jupiter, Dr. Kuiper calculated. Sometime within the past three billion years, however, two of them happened to collide, causing numerous fragments. Thereupon collisions became increasingly frequent until thousands of asteroids, tiny flying mountains known to exist in this region today, had been formed. The fire balls which flash through the earth's atmosphere and drop as meteorites are but the smallest members of this huge family of fragments created in the asteroid ring. Meteor Crater in Arizona was formed by one of these fragments.

Science News Letter, April 14, 1951

## PUBLIC HEALTH

## Old Plumbing Codes Add to Cost, Not Safety of Homes

► CENTURY-OLD plumbing codes still in force are adding to the costs of home construction without making homes any safer, an American Public Health Association committee in New York charged.

It is not necessary, for instance, that every fixture trap in a plumbing system be protected by an individual vent. Even though sewer gas were to enter a room through a temporary emptying of the trap, this gas is now known to be harmless, the committee on the hygiene of housing points out.

Similar handicaps to home building from the 2,200 local building codes in the country are described, with advice on how to make a home healthy without excessive cost, in the association's book, CONSTRUCTION AND EQUIPMENT OF THE HOME, published by the Public Administration Service of Chicago.

Science News Letter, April 14, 1951

## PHYSICS

## Atomic Particle Counted In Billionth of a Second

► AN ATOMIC particle can be counted in a billionth of a second by a new electronic technique developed by Stanford physicists.

Advantage is taken in the improved device of the fluorescent light that flashes when an atomic particle passes through suitable crystals or liquids. The scintillation counter made by Dr. Richard F. Post and a team of physicists gets extra speed by operating at 4000 volts instead of the 1000 volts used on tube of earlier scintillation counters, which are supersensitive cousins of Geiger counters.

Science News Letter, April 14, 1951



**FAST MEASUREMENT**—Norman Shiren, research assistant, and Dr. Richard F. Post, adjust photo-multiplier tube used in Stanford experiments which have counted an atomic particle in a billionth of a second.