ASTRONOMY

One of Strangest Stars

One of strangest stars in the universe is in Capella. This member of a twin-star team does not resemble any known single star, Dr. Struve reports.

➤ ONE OF the strangest stars in the universe is a member of the stellar team making up Capella, the second brightest star in the northern sky, Dr. Otto Struve of the University of California told members of the National Academy of Sciences meeting in Washington, D. C.

Streams of whirling gas within the atmosphere of this giant sun race around as fast as in any star yet observed, Dr. Struve estimates.

"This star does not resemble any known single star. It may be subject to large changes of a kind we have not found elsewhere in the universe," Dr. Struve pointed out.

Capella is visible these spring evenings in the northwest, in the constellation of Auriga, the charioteer. It has been known for several decades that Capella is composed of two giant stars, of about equal brightness. These twin stars are so close together observers always see them as one, but astronomers using Mt. Wilson's 100-inch telescope have actually seen them both. There is a third distant companion, a red dwarf.

The two giant stars circle around each other every 104 days. One of these giants is similar to our sun, but ten times as large; the other is somewhat like Procyon, bright star in Canis Minor, the smaller dog.

Astronomers have failed to realize, however, in how many ways this star differs from Procyon and other stars of the type it most nearly resembles. Capella has played an exceptionally important part in the development of theoretical astrophysics, a role it probably would not have been given had its peculiarities been fully appreciated.

Several decades ago the late Sir Arthur Eddington, famous British astronomer, used Capella as one of the two anchors to which he attached his famous mass-luminosity relation, the other anchor being the sun. This star was fundamental to his theory that massive stars of necessity shine brightly.

It was Capella along with other stars that led Sir Arthur to conclude that a body of gas having less than a tenth of the sun's mass would be unable to shine by its own light, whereas one of a thousand times the sun's mass would be subject to so great internal pressure of radiation that it would probably burst.

The star's spectrum—its light fanned out to its rainbow colors—is like a coded message requiring not one but two keys for its decoding. It is easy to match lines in Capella's spectrum with those of a star like the sun or Arcturus, in Bootes, the herdsman, high in the northern sky. So one of the twin stars is definitely of this type.

The spectrum of the other star making up bright Capella is unlike that of any other star Dr. Struve has encountered. Its strong spectrum lines are enormously enhanced and broadened, and its weaker lines are completely blocked out, he says.

Once again astronomers are reminded that close double stars are not like single stars. The two disturb each other and make them "peculiar."

ASTRONOMY

Earth and Other Planets Began as Flat Disks

The earth, Venus, Jupiter and other planets began as flat gaseous disks, Dr. Gerard P. Kuiper of the University of Chicago's Yerkes Observatory told members of the National Academy of Sciences in Washington D. C.

These extensive disks of gases, planets in the making, were formed from the same cosmic cloud that gave birth to the sun, Dr. Kuiper pointed out. The cloud itself was relatively flat, which accounts for the fact that the planets tend to move around the sun in about the same plane. During their creation they revolved at about the same distance from the sun as today.

Part of each planet's original gaseous matter was lost as it contracted into a more stable, more nearly round planet. At first the material was ejected through eddies set up by tremendous motions in the protoplanet's atmosphere, but later when the planet had become smaller and more compact true evaporation took place.

Science News Letter, May 5, 1951

MEDICINE

Adrenal Gland Cortex May Play Part in Liver Cancer

➤ FIRST EVIDENCE that the adrenal gland cortex, famous for production of cortisone, may play an important role in liver cancer has been obtained by Drs. Alexander Symeonidis, Ambadas S. Mulay and F. H. Burgoyne at the U. S. National Cancer Institute.

Rats could be kept from getting experimental liver cancer by a chemical relative of cortisone, desoxycorticosterone, these scientists discovered.

They fed the rats a semi-synthetic diet containing butter yellow. This cancer-causing dye chemical has nothing to do with butter, but gets its name from its color. Half the animals that lived six months on this diet developed liver cancer. But when animals on the same diet were given shots of the cortical hormone, the occurrence of cancers was drastically reduced.

The fact that the adrenal gland influences the function of liver cells and the regeneration of damaged livers has been known previously, but not the connection with liver cancer, it was pointed out.

Dr. Symeonidis and associates reported their findings at the American Association for Cancer Research in Cleveland.

Science News Letter, May 5, 1951