

SCIENCE NEWS

Science Service, Washington, D. C.

RED STARS

VERY red stars whose spectra show an abundance of titanium oxide and carbon compounds show a special distribution in our part of the galaxy. These conclusions have been set forth in a recent report by Dr. Oliver J. Lee, director, and Thomas J. Bartlett, of the Dearborn Observatory of Northwestern University.

The titanium oxide stars, known to astronomers as types M5 to M8, are more easily detected and classified on plates made at the observatory than any other stars, so if others had been present in the regions studied, they undoubtedly would have been identified during the Dearborn survey of faint red stars.

The second of three parts of the survey has just been announced in the *Annals of Dearborn Observatory*. So far nearly one third of the total area of the sky, or about 14,000 square degrees, has been studied.

M-type dwarf stars of absolute magnitude 9.7, which means stars only about 1/100 as bright as the sun, have been observed to a distance of about 123 light years, or 722,000,000,000,000 miles away. Ordinary giants and supergiants located hundreds of times farther away were also studied. Thus these giants have been hunted far and wide, and if they are well distributed in our galaxy, considerable numbers should have been recorded on the photographic plates as faint stars.

Among the 22,680 stars which have been catalogued thus far at the observatory only 1,499 were of the advanced titanium oxide type.

Because of the foregoing considerations, and because of the relatively high concentration of carbon stars in the anticentric regions of the Milky Way, several questions which would bear further investigation have occurred to the Dearborn astronomers:

Does our branch of the Milky Way have an unusually abundant supply of carbon and its compounds? Is this true also of the titanium oxide molecules in stars of advanced M type?

If so, is this due to quite irregular distribution of those cosmic materials or does our part of galactic space have properties which tend to make them more favorable materials for building stars?

Is our branch of our galaxy a somewhat recently developed subdivision, or possibly a very old one, in which a carbon cycle and perhaps a titanium cycle have gone berserk and rule the destinies of stars for a brief period with complete abandon?

ITEMS

A NEWLY designed 30-passenger domestic postwar transport plane, to be built by the Consolidated Vultee Aircraft Corporation, will combine passenger comfort with operating efficiency. In this new Convair design, designated as Model 110, speed at low cost, safety and complete comfort for travelers are incorporated. It is expected to reduce airline operating costs to a minimum. The new Convair will be a low-wing, twin-engine monoplane with a cruising speed of 275 miles an hour, at least 95 miles

an hour faster than the twin-engine transports in common use by domestic airlines. It will have a maximum speed of over 300 miles an hour. With a gross weight of 32,300 pounds, it will be able to carry an 8,000-pound payload of passengers, mail, express and baggage. Passengers will enter the new plane by means of a retractable stairway located beneath the tail. Luggage racks and a full-height coatroom are at the head of the stairs. Cabins will be finished in restful colors. Individually adjustable Polaroid windows will be used to reduce glare, spun-glass insulation will keep out engine noise, and custom-designed seats will provide passengers with comfort and an opportunity for relaxation.

THAT unit transportable electrical power plants, complete with generator, steam turbine, boiler and other necessary parts, are being shipped to Europe to furnish power in bombed-out regions to help the return to normal industrial production, is announced by William E. Knox, of the Westinghouse Electric International Company. The units are of two sizes, one with a capacity of 2,000 kilowatts, the other half as large. The idea of a compact power-producing unit first was conceived by Mr. Knox for use in China, following a trip to that country in 1939. The Chinese, forced back into the interior by the Japanese from their coastal industrial cities, needed a quick means of generating electric power for war production. Westinghouse designed units that could operate on locally abundant low-grade coal and models that were built to burn lignite, oil, wood and even peat. The European war created another demand. A semi-portable design was perfected that could be assembled in a minimum of time. To meet the emergency requirements of rehabilitation a design was made that simplifies the arrangement of the major parts and eliminates all dispensable refinements.

THE new insecticide, DDT, gives promise of eliminating barnacles from ships' bottoms and other marine structures. Barnacles failed to attach themselves in six months' time to wooden panels coated with a paint developed by Professor R. E. Dimick, of Oregon State College. This paint contained DDT, chemically dichlorodiphenyl-trichloroethane, and no other known toxic substance. Control boards treated with the ordinary antifouling paints were heavily covered with barnacles and other salt-water fouling animals after three months' submersion in marine waters. The anti-barnacle paint was one of a large group tested at the Yaquina Bay Fisheries Laboratory operated by the Oregon Agricultural Experiment Station. Since DDT is insoluble in water, the expectations are that its antifouling properties may greatly exceed the initial test period of six months. Studies are being continued to determine the efficiency of DDT as antifouling agent for marine animal forms other than barnacles, as a control for wood-boring marine mollusks and crustaceans, and to ascertain if the insecticide exhibits differences in antifouling properties for the various species of barnacles.