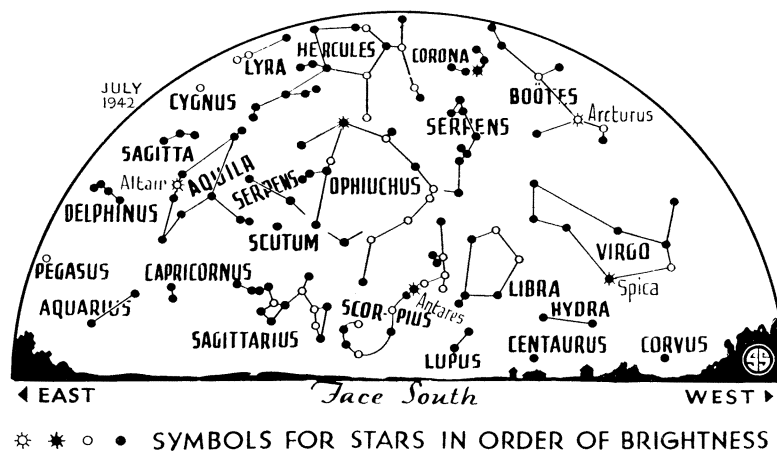


Scutum, the shield, which represented the shield of the Sobieskis, the ruling family of Poland; Canes Venatici, the hunting dogs; Leo Minor, the lesser lion, and Lacerta the lizard, are those indicated on the maps. Another is Vulpecula, the fox, which is not shown, but lies just above Sagitta, the arrow. A sixth is Sextans, the sextant, now below the horizon and near Leo. Hevelius also introduced Cerberus, the three-headed monster, which he had Hercules holding. This alone of the seven is not recognized today; its stars are now included in Hercules.



Celestial Time Table for July

Friday, July 3, 7:00 p.m., Venus passes Saturn. Sunday, July 5, 4:58 a.m., Moon in last quarter; 8:00 p.m., Earth farthest from sun, 94,421,000 miles. Monday, July 6, 6:00 a.m., Mercury farthest west of sun, visible for a few days about now before sunrise. Thursday, July 9, 4:39 p.m., Moon passes Saturn. Friday, July 10, 7:13 a.m., Moon passes Venus; 8:00 p.m., Moon farthest, distance 252,500 miles. Saturday, July 11, 11:30 a.m., Moon passes Mer-

cury. Sunday, July 12, 6:01 a.m., Moon passes Jupiter. Monday, July 13, 8:03 a.m., New moon. Wednesday, July 15, 7:46 p.m., Moon passes Mars. Tuesday, July 21, 1:13 a.m., Moon in first quarter. Sunday, July 26, 5:00 a.m., Moon nearest, distance 223,800 miles. Monday, July 27, 3:14 p.m., Full moon. Tuesday, July 28, after midnight, Meteors of delta Aquarid shower.

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especially important in modern warfare. Navigation also includes piloting, dead reckoning, radio navigation, celestial navigation, and problems. Of these, only celestial navigation is strictly astronomical, yet hundreds of astronomers are called upon to teach the entire subject in the war emergency. Their students, in turn, become instructors of civil air corps pilots, army and navy men, and in civil aeronautics courses.

"Relative motion," said Dr. Pierce, "has been under-emphasized and often badly garbled in the various texts which treat of it at all. It is true that relative motion has little use in peace time marine navigation. It is, however, of great importance in war time for fleet maneuvers, and is important at all times for the air navigator. However, this is not a subject the student easily understands, and therefore, it should receive considerable emphasis, particularly by vector solutions, which may be made easily and quickly. The Princeton astronomers recommended that the methods of solution of navigational problems used by the Service schools be followed, and that the air almanac be used in preference to the nautical almanac wherever possible.

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ASTRONOMY

Teaching of Air and Marine Navigation Together Urged

Astronomer Stresses Need To Teach Subject as an Operational Routine; Use Hydrographic Office Terms

THE importance of unified and simultaneous instruction in air and marine navigation, and the importance of training college students in the operational routine of navigation rather than in old-fashioned principles were stressed by astronomers discussing the teaching of navigation at the American Astronomical Society meeting in New Haven.

Dr. John Q. Stewart, of Princeton University, said that pretraining in navigation of the better-equipped college students had received the approval of high officials in the Navy. Service schools do not have time to insure the thorough mastery of navigation operations which are essential to avoiding disaster during military maneuvers, and they are also in great need of instructors in the paperwork of navigation.

College courses on navigation should include the latest methods of air navigation along with the older marine methods, Dr. Stewart said. This is particularly important in view of the growing cooperation between surface ships and air

forces, which requires mutual understanding among navigators.

"It is not necessary to have a preliminary course in trigonometry and logarithms," Dr. Stewart stated, "far less in spherical trigonometry."

He stressed that navigation must be taught as an operational routine. "Graphical methods, linear interpolations, and judgment of tolerances should be taught well," he said.

Standard Hydrographic Office terminology ought to be used by all books and teachers of navigation, regardless of whether in air or marine phases. Dr. Stewart regards it as troublesome that manuals of navigation have been written for civilian and army pilots which deviate unnecessarily from standard methods and nomenclature. He recommended that the college teacher use Bowditch, the navy aircraft manual, the maneuvering board manual, and Dutton's book on navigation.

Relative motion was stressed by Dr. Newton L. Pierce, also of Princeton, as

PUBLIC HEALTH

Health Service Officer Stricken By Rabbit Fever

DR. CHARLES ARMSTRONG, Senior Surgeon, U. S. Public Health Service, and Director of the Division of Infectious Diseases of the National Institute of Health, has been suffering from a severe attack of tularemia (rabbit fever) since May 25.

He was taken sick a few hours after arrival on an official visit to the Rocky Mountain Spotted Fever Laboratory at Hamilton, Mont., which is one of the

