YERKES OBSERVATORY—WILLIAMS BAY, WIS.

YERKES OBSERVATORY, UNIVERSITY OF CHICAGO.

BULLETIN NO. 1.

The present is the first of a series of Bulletins which will be printed at irregular intervals by the Yerkes Observatory for the purpose of making announcements which require immediate or special publication. These will include statements with regard to the work of the Observatory, brief descriptions of new buildings and instruments, and other notes on miscellaneous matters of interest. The Bulletins will be published in the Astrophysical Journal. They will also be distributed separately, without charge, to a limited number of scientific men and institutions likely to find them of service in connection with their work.

ORGANIZATION OF THE YERKES OBSERVATORY.

GEORGE E. HALE, - - - Director.
S. W. BURNHAM, - - - Astronomer.
E. E. BARNARD, - - - Astronomer.
F. L. O. WADSWORTH, - - - Astrophysicist.
'T. J. J. SEE, - - - Instructor at The University.
¹KURT LAVES, - - - Assistant at The University.
FERDINAND ELLERMAN, - - Assistant.
G. WILLIS RITCHEY, - - - Optician.
EDMUND KANDLER, - - - Mechanician.
WILLIAM GAERTNER, - - - Mechanician.

¹Messrs. See and Laves will give undergraduate and graduate instruction in theoretical and practical astronomy at The University in Chicago, and superintend the Student's Observatory, which will be equipped for instruction in practical astronomy preparatory to work at the Yerkes Observatory. For a full statement of the courses of instruction offered at The University and the Yerkes Observatory see the Annual Register of The University of Chicago.
BUILDING AND INSTRUMENTS.

The Yerkes Observatory was founded in 1892 through the munificence of Mr. Charles T. Yerkes, of Chicago. In that year Mr. Alvan G. Clark undertook the construction of an object glass of forty inches aperture for the principal telescope of the Observatory, and Messrs. Warner & Swasey were given a contract for the equatorial mounting. The latter was completed in the following year, and exhibited by its makers at the Columbian Exposition. It is similar to the mounting of the 36-inch Lick telescope, but is heavier and more rigid, and many improvements have been introduced. An important feature, long ago suggested by Grubb and others, but apparently employed for the first time in this telescope, is a system of electric motors, by means of which the various motions, etc., are effected. The object-glass has recently been tested by Professor James E. Keeler, who acted at the request of the Director as the “expert agent” called for by the contract. The definition was found to be fully equal to that of the Lick telescope, while the light-gathering power is considerably greater. (See Astrophysical Journal, 3, 154, 1896.)

The attachments of the Yerkes telescope will include:

1. A position micrometer by Warner & Swasey.
2. A solar spectrograph, for micrometrical and photographic investigations of the spectra of solar phenomena.
3. A spectroheliograph, for photographing the solar chromosphere, prominences and faculae by monochromatic light.
4. A stellar spectrograph, for researches on the spectra and motions of stars, nebulae, comets and planets.
5. A photoheliograph of great focal length, for photographing the direct solar image on a large scale.

The construction of the main building of the Observatory was begun in April 1895. After many delays, it is now under roof, and will be completed in the summer of 1896. Its form is that of a Roman cross, with three domes and a meridian room at the extremities. The principal axis of the building (about 330 feet long) lies east and west, with the dome for the 40-inch telescope at the western end. This dome, which will soon be erected by Messrs. Warner & Swasey, is 90 feet in diameter, allowing ample space for the tube of the great telescope, which, with its attachments, is about 75 feet long. The elevating floor of the observing room is 75 feet in diameter, and will be movable through a range of 22 feet, by means of electric motors.
Of the two smaller domes, the one to the northwest will contain the 12-inch telescope now at the Kenwood Observatory, and the other a 24-inch reflector. Between these domes is the heliostat room, 100 feet long and 12 feet wide. A heliostat with 24-inch plane mirror will stand on a pier at the north end of the room, under an iron roof which can be rolled away to the south.

The meridian room has double sheet-iron walls, with an intervening air space. It is designed to contain a meridian circle of large aperture, but for the present a transit instrument will suffice for the purposes of the Observatory.

The body of the building is divided through the center by a hallway extending from the meridian room to the great tower. On either side are offices and computing rooms, a library, lecture room, two spectroscopic laboratories, dark room, developing room, galvanometer room, chemical laboratory, instrument rooms, etc. In the basement is a large photographic dark room, an enlarging room, concave grating room with large concave grating spectroscope, emulsion room, constant-temperature room, physical laboratory and optician’s room. The engines, dynamos and boilers for supplying power and heat are to be at a distance of several hundred feet from the Observatory.

OPTICAL LABORATORY AND INSTRUMENT SHOP.

One novel feature in connection with the Observatory will be its instrument shop and optical laboratory, where it is hoped that it will ultimately be possible to construct the greater part of the instruments and laboratory apparatus which will be needed for purposes of investigation. This work is undertaken not because of any lack of instrument makers in this country, but because it is believed that the best results can only be secured when instruments of research are constructed under the immediate supervision of those who are to use them. Desirable changes in construction or design which become evident as the work progresses can, under these circumstances, be more readily and inexpensively made than when the work is being done at a distance. In the end the instrument makers themselves cannot fail to benefit by the experiments thus undertaken and the types of apparatus evolved. Mr. G. Willis Ritchey has been placed in charge of the optical work. His equipment will consist of a large laboratory fitted with grinding and polishing apparatus, with complete arrangements for testing optical surfaces. The instrument shop, which will be used by Messrs.
Kandler and Gaertner, under the direction of Professor Wadsworth, will be equipped with a complete outfit of instrument-makers' tools.

SITE.

The Observatory is situated about a mile from the town of Williams Bay, near Lake Geneva, Wisconsin, in an ideal rural region, free from the dust and smoke of cities, and removed from the tremors of railroad traffic. Lake Geneva is about seventy-five miles from Chicago, and is reached by a branch of the Northwestern railroad. The site of the Observatory includes about fifty acres of wooded land fronting on the lake. It is believed that the conditions will be favorable for the most delicate investigations in all branches of astronomy and astrophysics.

PUBLICATIONS.

The publications of the Observatory will include: *Bulletins of the Yerkes Observatory*, containing announcements of results, brief descriptions of new buildings and instruments, and notes on the work of the Observatory; *Contributions from the Yerkes Observatory*, consisting of papers contributed to various astronomical and astrophysical journals and the proceedings of scientific societies; *Annals of the Yerkes Observatory*, in the form of quarto volumes containing detailed accounts of special researches; and the *Astrophysical Journal*, an International Review of Spectroscopy and Astronomical Physics, edited by Professor George E. Hale, Director of the Yerkes Observatory, and Professor James E. Keeler, Director of the Allegheny Observatory, with the cooperation of a board of assistant and associate editors.

LIBRARY AND MUSEUM.

It is intended to establish at the Yerkes Observatory a museum for the preservation and exhibition of photographs, charts and drawings of the Sun, Moon, planets, comets, meteors, stars and nebulae and their spectra, and of optical phenomena observed in the laboratory; photographs and drawings of astronomical and physical instruments; and portraits of astronomers, astrophysicists and physicists.

Scientific men, learned societies and directors of laboratories and observatories are earnestly requested to assist in the formation of a library for the Observatory by contributing to it copies of their publications. Photographs of scientific subjects, on glass or paper, will be very wel-
come for exhibition in the museum. Drawings and catalogues of scientific instruments are also desired. It is expected that the Observatory will ultimately be able to make some return for such contributions in the form of its own publications and photographic results.

For the present, and until notice of removal to Lake Geneva has been published, packages intended for the Yerkes Observatory should be addressed to the Kenwood Observatory, Chicago, U. S. A. Large parcels may be sent through the agency of the International Bureau of Exchanges of the Smithsonian Institution, to which the Yerkes Observatory is already indebted for such service.

ACKNOWLEDGMENTS.

The present opportunity is taken to extend the cordial thanks of the Observatory to all who have favored it with gifts. Among those calling for special mention are the following:

The large and valuable collection of astronomical photographs exhibited by the Royal Astronomical Society at the Columbian Exposition in 1893; presented by the Society.

A collection of fifty positives on glass, from Professor Barnard's remarkable negatives of the Milky Way, nebulae and comets; presented by Professor E. E. Barnard.

Eighty-seven bound volumes of astronomical and meteorological observations, including a complete set of the Memorie della Società degli Spettroscopisti Italiani; presented by Professor P. Tacchini.

Sixty-eight bound quarto volumes, including Greenwich Observations and Photographic and Spectroscopic Results; presented by W. H. M. Christie, Esq., Astronomer Royal.

Twenty-two bound quarto volumes of Cambridge Observations; presented by Sir Robert S. Ball, Lowndean Professor at Cambridge.

Thirty-nine quarto volumes of the Annals of Harvard College Observatory; presented by Professor E. C. Pickering, Director.

On the completion of the Yerkes Observatory the instruments of the Kenwood Observatory will be removed to Lake Geneva, and the existence of the latter institution will cease. To all who have enriched its library by contributions of their publications, grateful thanks are extended.

George E. Hale.

Chicago, February 10, 1896.