

equatorial telescope authorized by Congress, supervised its construction, and planned the tower and dome in which it is mounted. In 1871 he was apptd. Secy. of the comn. that was created by Congress for the purpose of observing the transit of Venus, Dec. 9, 1874, which organized the expeditions that were sent out by the U. S. Govt. He visited the Saskatchewan region, 1860, to observe an eclipse of the sun, and, 1870-71, was sent to Gibraltar for a similar purpose, and, 1882, he observed the transit of Venus at the Cape of Good Hope. Meanwhile, 1877, he became Senior Prof. of Math. in the U. S. navy, with the relative rank of Capt., and since that time has been in charge of the office of the "Am. Ephemeris and Nautical Almanac." A large corps of civilian assistants in Washington and elsewhere, as well as offrs. of the navy who are detailed to that office, work under his direction. In addition to these duties, he became, 1884, Prof. of Math. and Astron. in Johns Hopkins Univ., Baltimore, where he has charge of the graduate students in Astron. Prof. N. has been intimately associated with the equipment of the Lick Observatory, California, and examined the glass of the great telescope and its mounting before its acceptance by the trustees. The result of his scientific work has been given to the world in more than 100 papers and memoirs. His work has been principally in the math. astronomy of the solar system, particularly Neptune, Uranus and the moon; but the whole plan includes the most exact possible tables of the motions of all the planets. Among the most important of his papers are: "On the Secular Variations and Mutual Relations of the Orbits of the Asteroids" (1860), "An Investigation of the Orbit of Neptune, with General Tables of its Motion" (1867), "An Investigation of the Orbit of Uranus, with General Tables of its Motion" (1874), "Researches on the Motion of the

Moon" (1876), "Measure of the Velocity of Light" (1884), and "Development of the Perturbative Function and its Derivative in Sines and Cosines of the Eccentric Anomaly, and in Powers of the Eccentricities and Inclinations" (1884). In 1874 Columbia Univ., Washington, conferred on him the degree of LL.D., and, in 1875, he received a similar honour from Yale; also from Harvard, 1884, and from Columbia, 1887, while on the 300th anniversary of the founding of the Univ. of Leyden, 1875, that institution gave him the degree of Master of Math. and Doctor of Natural Phil., and on the 500th anniversary of the Univ. of Heidelberg, 1886, he received the degree of Ph.D. He was awarded the gold medal of the Royal Astronomical Soc., 1874 and, in 1878, received the great gold Huygens medal of the Univ. of Leyden, which is given to astronomers once in 20 yrs. for the most important work accomplished in that science between its awards. In 1887 the Russian Govt. ordered the portrait of Prof. N. to be painted for the collection of famous astronomers at the Russian observatory at Pulkowa. He was elected an Associate of the Royal Astron. Soc., 1872; corr. mem. of the Inst. of France, 1874; foreign mem. of the Royal Soc., 1877; an Associate Academician Acad. of Sciences, France, 1895; and an hon. mem. of the Acad. of Science, Russia, 1897. He also holds hon. or corr. relations to nearly all the other European acads. of science. In 1887 he was elected one of the 8 mems. of the council of the *Astronomische Gesellschaft*, an internl. astron. soc. that meets once in 2 yrs. He was elected to the Am. National Acad. of Sciences, 1869, and since 1883 has been V.-P. In 1876 he was elected Presdt. of the Am. Assn. for the Advance. of Science, and he delivered his retiring address at the St. Louis meeting, 1878. He has also held the presidency of the Am. Soc. for Psychical Research. His literary work in-