

Explanation of the sparkling and scintillation of the stars—p. 73. Velocity of light—p. 79–88. Order of magnitude of the stars; photometric relations and methods of measurement—p. 89–98. Cyanometer—p. 97. Photometric order of the fixed stars—p. 99–102.

III. *Number, distribution, and color of the fixed stars; Stellar clusters and the Milky Way*: States of the sky which hinder or favor the detection of stars—p. 103. Number of the stars; how many may be seen with the naked eye—p. 104. How many have been inserted in stellar charts with determinations of position—p. 108. Conjectural estimation of the number of stars which can be visible in the entire heavens with our present powers of penetrating space—p. 105. Contemplative astrogony of uncivilized people—p. 109. The Grecian sphere—p. 118. The crystal sky—p. 123. False diameter of the fixed stars in telescopes—p. 129. Smallest objects in the heavens which have yet been seen—p. 130. Difference of colors in the stars, and the changes which have taken place in the colors since antiquity—p. 130. Sirius (*Sothis*)—p. 132. The four royal stars—p. 136. Gradual acquaintance with the Southern heaven—p. 137. Distribution of the fixed stars, laws of relative accumulation, gauging—p. 138. Clusters and swarms of stars—p. 140. The Milky Way—p. 143.

IV. *Stars that have newly appeared and disappeared; variable stars and changes in the intensity of their light whose periodicity has not been investigated*: New stars in the last 2000 years—p. 151. Periodically changeable stars: Historical particulars—p. 151. Color—p. 165. Number—p. 164. Order recognizable in apparent irregularity; great differences of brightness; periods within periods—p. 167. Argelauder's table of the variable stars with commentary—p. 172. Variable stars in undetermined periods (η Argûs, Capella, stars of the Ursæ Major and Minor)—p. 181. Reference to the possible changes of temperature on the Earth's surface—p. 181.

V. *Proper motion of the fixed stars, dark cosmical bodies, parallax; doubts as to the assumption of a central body for the entire heaven of fixed stars*: Change of the physiognomy of the sky—p. 182. Amount of the proper motion—p. 184. Evidence in favor of the probable existence of non-luminous bodies—p. 186. Parallax and measurement of the distance of some fixed stars from our solar system—p. 187. The aberration of light may be applied to the determination of the parallax of double stars—p. 194. The discovery of the proper motion of the fixed stars has led to the knowledge of the motion of our own solar system, and even to the knowledge of the direction of this motion—p. 184 and 194. Problem of the situation of the center of gravity of the whole heaven of fixed stars and central suns?—p. 196, and note †, p. 198, and p. 199, note *.

VI. *Double stars, period of revolution of two suns round a common center of gravity*: Optical and physical double stars—p. 200; number—p. 201. Uniformity and difference of color; the latter not the consequence of optical deception, of the contrast of complementary colors—p. 207, note *, p. 206, and p. 209, note *. Change of brightness—p. 209. Multiple combinations (three to six fold)—p. 209. Calculated orbital elements, half major axis and period of rotation in years—p. 213.

VII. *Nebulæ, Magellanic Clouds, and Coal-sacks*: Resolvability of the nebulæ; questions as to whether they are all remote and crowded