

in the orbits of the planets; a rotating ring (the zodiacal light) and meteoric stones, probably to be regarded as small cosmical bodies. The telescopic planets, Vesta, Juno, Ceres, Pallas, Astrea, Hebe, Iris, and Flora, with their frequently intersecting, strongly inclined, and more eccentric orbits, constitute a central group of separation between the inner planetary group (Mercury, Venus, the Earth, and Mars) and the outer group (Jupiter, Saturn, Uranus, and Neptune). Contrasts of these planetary groups. Relations of distance from one central body. Differences of absolute magnitude, density, period of revolution, eccentricity, and inclination of the orbits. The so-called law of the distances of the planets from their central sun. The planets which have the largest number of moons—p. 96 and note. Relations in space, both absolute and relative, of the secondary planets. Largest and smallest of the moons. Greatest approximation to a primary planet. Retrogressive movement of the moons of Uranus. Libration of the Earth's satellite—p. 98 and note. Comets; the nucleus and tail; various forms and directions of the emanations in conoidal envelopes, with more or less dense walls. Several tails inclined toward the sun; change of form of the tail; its conjectured rotation. Nature of light. Occultations of the fixed stars by the nuclei of comets. Eccentricity of their orbits and periods of revolution. Greatest distance and greatest approximation of comets. Passage through the system of Jupiter's satellites. Comets of short periods of revolution, more correctly termed inner comets (Encke, Biela, Faye)—p. 107 and note. Revolving aërolites (meteoric stones, fire-balls, falling stars). Their planetary velocity, magnitude, form, observed height. Periodic return in streams; the November stream and the stream of St. Lawrence. Chemical composition of meteoric asteroids—p. 130 and notes. Ring of zodiacal light. Limitation of the present solar atmosphere—p. 141 and note. Translatory motion of the whole solar system—p. 145-149 and note. The existence of the law of gravitation beyond our solar system. The milky way of stars and its conjectured breaking up. Milky way of nebulous spots, at right angles with that of the stars. Periods of revolutions of bi-colored double stars. Canopy of stars; openings in the stellar stratum. Events in the universe; the apparition of new stars. Propagation of light, the aspect of the starry vault of the heavens conveys to the mind an idea of inequality of time—p. 149-154 and notes.

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