and are at the same time the largest, most compressed at the poles, and the least dense. According to the most recent measurements of Mädler, Uranus has a greater planetary compression than any other of the planets, viz., $\frac{1}{9\cdot92}$d. In our Earth and her moon, whose mean distance from one another amounts to 207,200 miles, we find that the differences of mass* and diameter between the two are much less considerable than are usually observed to exist between the principal planets and their attendant satellites, or between bodies of different orders in the solar system. While the density of the Moon is five ninths less than that of the Earth, it would appear, if we may sufficiently depend upon the determinations of their magnitudes and masses, that the second of Jupiter's moons is actually denser than that great planet itself. Among the fourteen satellites that have been investigated with any degree of certainty, the system of the seven satellites of Saturn presents an instance of the greatest possible contrast, both in absolute magnitude and in distance from the central body. The sixth of these satellites is probably not much smaller than Mars, while our moon has a diameter which does not amount to more than half that of the latter planet. With respect to volume, the two outer, the sixth and seventh of Saturn's satellites, approach the nearest to the third and brightest of Jupiter's moons. The two innermost of these satellites belong perhaps, together with the remote moons of Uranus, to the smallest cosmical bodies of our solar system, being only made visible under favorable circumstances by the most powerful instruments. They were first discovered by the forty-foot telescope of William Herschel in 1789, and were seen again by John Herschel at the Cape of Good Hope, by Vico at Rome, and by Lamont at Munich. Determinations of the *true* diameter of satellites, made by the measurement of the apparent size of their small disks, are subjected to many optical difficulties; but numerical astronomy, whose task it is to predetermine by calculation the motions of the heavenly bodies as they will appear when viewed from the Earth, is directed al-

* If, according to Burckhardt's determination, the Moon's radius be 0.2725 and its volume $\frac{1}{49\cdot09}$th, its density will be 0·5596, or nearly five ninths. Compare, also, Wilh. Beer und H. Mädler, *der Mond*, § 2, 10, and Mädler, *Ast.*, § 157. The material contents of the Moon are, according to Hausen, nearly $\frac{1}{54}$th (and according to Mädler $\frac{1}{49\cdot6}$th) that of the Earth, and its mass equal to $\frac{1}{87\cdot73}$d that of the Earth. In the largest of Jupiter's moons, the third, the relations of volume to the central body are $\frac{1}{15370}$th, and of mass $\frac{1}{11300}$th. On the polar flattening of Uranus, see Schum., *Astron. Nachr.*, 1844, No. 493.