ecliptic, depend, as theoretical astronomy proves, upon the configuration.

The absolute magnitudes of the planets, and their distance from the Earth, determine their apparent diameter. We have, therefore, to arrange the planets according to their absolute (actual) magnitudes, proceeding from the larger to the smaller:

The small planets with involved orbits, of which the largest appears to be Pallas and Vesta:

Mercury,	Neptune,
Mars,	Uranus,
Venus,	Saturn,
Earth,	Jupiter.

The apparent equatorial diameter of Jupiter, at a mean distance from the Earth, is 38″·4, while that of Venus, which is nearly equal in magnitude to the Earth, is only 16·9″; that of Mars, 5″·8. But the apparent diameter of the disk of Venus increases in the inferior conjunction to 62″, while that of Jupiter attains only an increase to 46″. It is necessary to call to mind in this place that the point of the orbit of Venus at which it appears to us with the brightest light, falls between the inferior conjunction and her greatest digression from the Sun, because in that position the small luminous crescent gives the most intense light, on account of its greatest proximity to the Earth. Upon the average, Venus appears the most beautifully luminous, even casting shadows in the absence of the Sun, when at a distance of 40° east or west from the Sun; the apparent diameter then amounts to only 40″, and the greatest width of the illuminated phase is scarcely 10″.

Apparent Diameter of Seven Planets.

Mercury	at a mean distance	6″·7	(oscillates from	4″·4	to 12″)
Venus	" "	16″·9	("	9″·5	to 62″)
Mars	" "	5″·8	("	3″·3	to 23″)
Jupiter	" "	38″·4	("	30″	to 46″)
Saturn	" "	17″·1	("	15″	to 20″)
Uranus	" "	3″·9			
Neptune	" "	2″·7			

The volumes of the planets in relation to the Earth are:

Mercury	as	1 : 16·7	Jupiter	as	1414 : 1
Venus	"	1 : 1·05	Saturn	"	735 : 1
Earth	"	1 : 1	Uranus	"	82 : 1
Mars	"	1 : 7·14	Neptune	"	108 : 1