## ELEMENTS OF GEOGRAPHY.

of Mercury to the sun, and the immense distance of Saturn, and the Georgium Sidus, have as yet baffled the attempts of astronomers to ascertain the times of their revolutions on their axis.— Venus turns once round in twenty-four of our days nearly; the Earth in twenty-four hours; Mars in twenty-four hours and forty minutes, and Jupiter in pine hours and fifty-six minutes.

14. Mercury and Venus are called Inferior Planets, because the earth's Orbit includes theirs ; but Mars, Jupiter, Saturn, and the Georgium Sidus, are called Superior Planets, because their orbits include the Earth's. The inferior Planets will sometimes appear east of the sun, and sometimes west according to the part of their orbits they are in; when east they are Evening Stars, and when west, Morning Stars. Venus, at most, can set but three hours and a quarter after the sun, and rise three hours and a quarter before him, and Mercury two hours. When they rise and set with the sun if they be in the remote part of the orbit, we call this the Superior Conjunction, but if in the nearest part, the Inferior Conjunction; at which time, if they fall exactly between the earth and the sun, then such a phenomenon is called a Transit, and the planet will appear like a black spot passing over

the sun: These transits happen but seldom.— As the orbits of the superior planets include that of the earth therefore they will sometimes, appear quite opposite to the sun, that is, rise when he sets, and set when he rises; and this is called the time of their Opposition; they may rise and set also with the sun, like the inferior planets: Hence the superior planets have both conjunctions and oppositions; but the inferior planets have only conjunctions.

15. The planets, in moving round the sun, are nearer to him at one time than another ; for their orbits are not perfect circles but ELLIP-SES; and the sun is placed in one of the Forr. which are two points at some distance from the centre ; and the distance of either focus from the centre, is called the Excentricity of the orbit. In the Earth's orbit, the excentricity is seventeen parts of a thousand; so that if the mean distance of the earth from the sun be supposed a thousand equal parts, the distance of the earth when nearest the sun is seventeen parts less than a thousand, but when farthest from him, in the opposite part of the orbit, seventeen parts more than a thousand.-The point in a planet's orbit, nearest the sun, is callad the Perihelion, and the opposite point, the Aphelion : Perihelion from the Greek